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PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
SEPTEMBER 1963

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 229
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
30 Sept. 1963

SOLAR - GEOPHYSICAL DATA

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The text describing the contents of Part B was republished in November 1962. A revision was made December 1962, and an addenda January 1963.

1963 July	American Relative Sunspot Numbers $R_{A'}$
1	19
2	18
3	22
4	17
5	11
6	11
7	11
8	11
9	12
10	11
11	12
12	11
13	22
14	24
15	17
16	15
17	12
18	12
19	10
20	8
21	11
22	10
23	14
24	19
25	13
26	1
27	1
28	4
29	23
30	48
31	56
Mean:	15.7

1963 Aug.	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	65	87
2	55	87
3	53	87
4	51	88
5	50	86
6	53	88
7	38	85
8	28	81
9	23	80
10	20	77
11	9	72
12	0	73
13	7	74
14	11	71
15	11	72
16	18	76
17	29	82
18	43	80
19	36	79
20	36	81
21	50	84
22	68	86
23	64	90
24	50	87
25	37	85
26	29	82
27	16	80
28	21	77
29	16	77
30	23	77
31	24	77
Mean:	33.4	80.9

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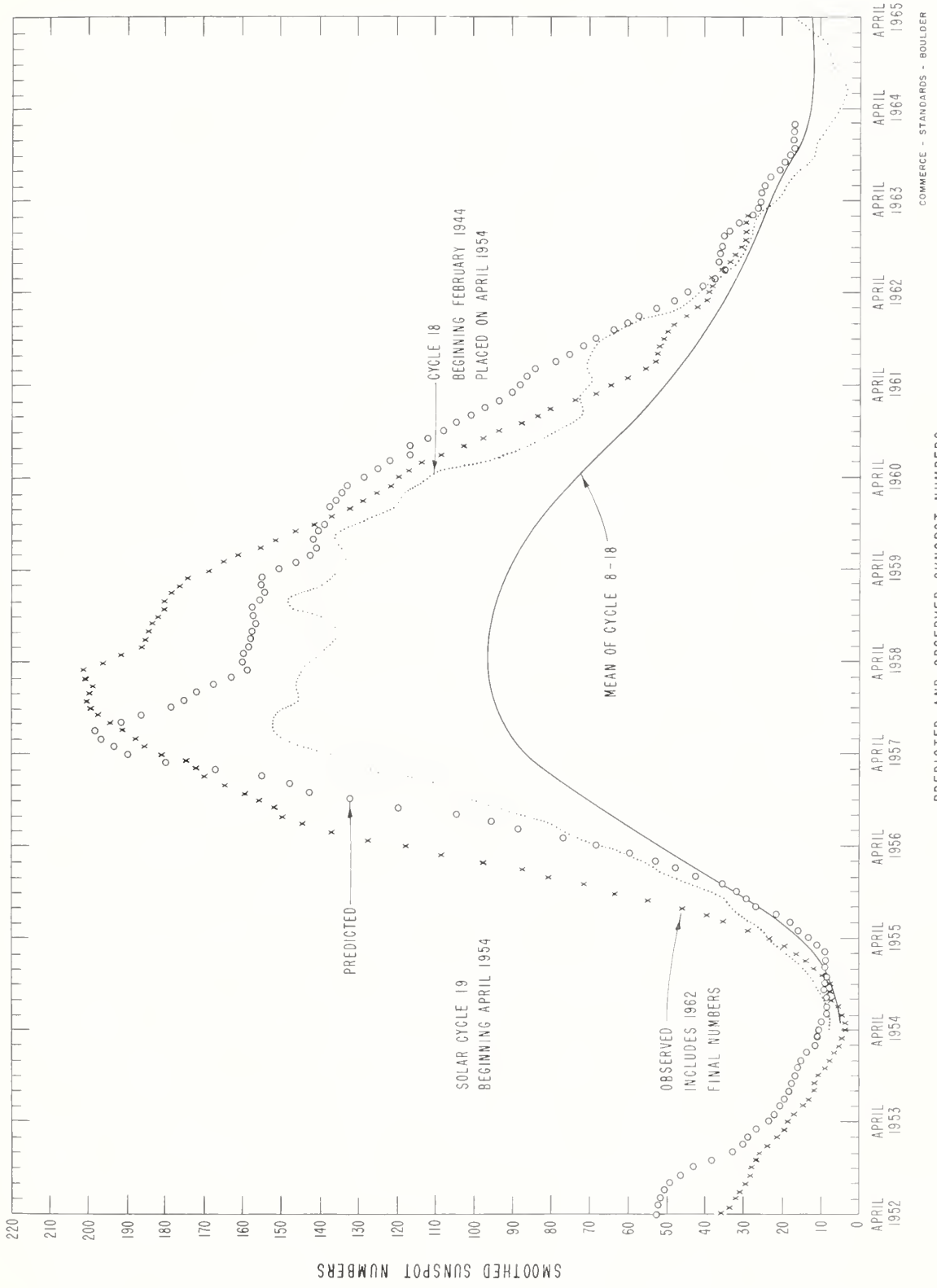

PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

AUGUST 1963

AUG. 1963	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA						SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTATIONS)	DATE FIRST SEEN	DURATION (DAYS)	CMP VALUES		HISTORY
				AREA	INT					AREA	COUNT	
July 31.8	S31	6917(2)	New	(200)	(1.5)	b — d	1	8/5	1			
Aug. 4.2	N12	6908	New	2000	3.5	ℓ ⌒ ℓ	1	7/29	13	490	1	ℓ — ℓ
4.0	S19	6918(2)	New	(200)	(1.5)	b — d	1	8/5	1			
5.2	N11	6909	6870	2400	3.5	ℓ ⌒ ℓ	4	7/30	13	330	11	ℓ — ℓ
5.3	N19	6910	(1)	400	1	ℓ — ℓ	4	7/30	13			
5.9	S15	6921	New	(100)	(2.5)	b — d	1	8/9	2			
6.2	N13	6919	New	100	1	b ⌒ d	1	8/5	3			
6.3	N22	6911	(1)	300	1.5	ℓ — ℓ	4	7/31	11			
6.3	S03	6912	New	(200)	(1.5)	b ⌒ d	1	8/1	3			
7.9	N10	6913	6875	500	1.5	ℓ — d	4	8/2	10			
9.1	N10	6915	6875	1400	2	ℓ ⌒ ℓ	4	8/3	12			
9.6	S31	6920	New	(200)	(1.5)	b — d	1	8/6	2			
10.4	N13	6916	New	700	2.5	ℓ ⌒ ℓ	1	8/3	13			
12.6	S13	6922(2)	New	300	2	b — d	1	8/10	1			
13.0	S16	6925	New	(200)	(1.5)	b ⌒ d	1	8/14	3			
16.0	N13	6923	6887	700	2.5	ℓ — ℓ	4	8/10	12			
16.4	S02	6935(2)	New	(200)	(2.5)	b ⌒ ℓ	1	8/21	1			
17.6	N08	6933	New	(300)	(1)	b ⌒ d	1	8/19	2			
18.0	S21	6934(2)	New	(200)	(2)	b — d	1	8/20	1			
18.2	S12	6924	New	2600	3	ℓ ⌒ ℓ	1	8/12	13	440	8	b ⌒ ℓ
19.8	S05	6926	New	200	1	ℓ ⌒ d	1	8/14	8			
19.9	N06	6927(3)	6892	700	2.5	ℓ ⌒ ℓ	4	8/14	13	290	7	b ⌒ ℓ
20.6	S08	6930	New	300	1.5	b ⌒ ℓ	1	≈ 8/18	9	360	8	b ⌒ ℓ
21.2	N12	6929	(4)	500	1.5	ℓ ⌒ d	4	8/15	10			
21.8	N03	6936	New	300	1.5	b ⌒ d	1	8/22	2			
23.0	S13	6943(2)	New	(200)	(2)	b ⌒ d	1	8/26	1			
24.6	N12	6931	6905	1200	2.5	ℓ ⌒ ℓ	2	8/18	13			
24.7	S08	6932	New	1400	3.5	ℓ — ℓ	1	8/18	13	190	1	ℓ ⌒ d
25.4	N01	6938(2)	New	200	2	b — d	1	8/24	1			
26.0	S15	6939(2)	New	100	2	b — d	1	8/24	1			
27.3	S19	6937	6906	300	1	ℓ ⌒ d	6	8/22	5			
28.0	N08	6940	New	(200)	(1.5)	b ⌒ d	1	8/24	2			
28.2	N01	6948	New	(100)	(2)	b — d	1	8/31	2			
28.3	S12	6944	New	300	(2.5)	b ⌒ d	1	8/26	5			
30.0	N02	6949(2)	New	(100)	(1.5)	b — d	1	8/31	1			
30.7	S12	6945(2)	New	(200)	(1.5)	b — d	1	8/27	1			
30.9	N09	6948	6908	1400	3	ℓ ⌒ ℓ	2	8/24	13	240	2	ℓ ⌒ d

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(1) Part of 6870
(2) These plages are small and very ephemeral, lasting for only a day.
(3) Plage 6927 experienced a marked change in intensity on the disk on August 21.
(4) Part of 6892

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

AUGUST 1963

Aug. 1963	Time Meas. UT	Lat.	Mer. Dist.	Type
1	0025	N12	W47	βp
		N11	E40	β
		N10	E54	αp
		N12	E60	αp
2	0045	N12	W60	βp
		N11	E26	βp
		N10	E40	βp
		N12	E46	αf
3	No Obs.			
4	0005	N11	E00	βp
		N09	E15	βp
		N13	E21	βf
5	0040	N11	W13	βp
		N09	E02	βp
		N13	E08	βf*
6	2135	N10	W39	βp
		N09	W23	βp
		N13	W17	αf
		N06	E21	β
7	No Obs.			
8	2115	N11	W65	αp
		N09	W50	βp
9	No Obs.			
10	0020	N09	W67	αp
11	No Spots			
12	No Obs.			
13	1925	N11	E29	βf
14	No Obs.			
15	0045	S12	E44	β
15	2130	S12	E32	β
16-17	No Obs.			
18	0024	S11	E02	βγ
18	2355	S12	W11	β
		S10	E72	β
19	2335	S12	W25	βp
		S09	E60	βf
20	1720	S12	W35	βγ
		N08	W05	β
		S10	E50	βf
21	1645	S12	W47	αp
		S03	W19	βf**
		S17	W16	β
		S10	E42	αf
22-28	No Obs.			
29	2350	N09	E26	αp
30	2400	N11	E00	αp
		N09	E13	αp
		N03	E57	βp
31	No Obs.			

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* Polarities Reversed For βf in Northern Hemisphere.
** Polarities Reversed For βf in Southern Hemisphere.

PROVISIONAL CORONAL LINE EMISSION INDICES

AUGUST 1963

CMP Aug 1963	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	23	75	x	x	12	17	x	x	3	3	x	x	14	17	x	x
2	8	11	x	x	7	8	x	x	x	x	21	24	x	x	25	46
3	18	25	18	24	7	11	16	20	3	5	7	10	6	11	7	8
4	37	56	19	28	2	3	15	20	9	12	11	12	46	93	7	15
5	73	120	x	x	4	8	x	x	2	3	x	x	3	4	x	x
6	46	92	32	66	4	11	19	22	6	6	25	36	27	42	21	32
7	18	30	15	20	5	7	20	24	4	8	19	28	30	39	12	20
8	10	14	x	x	3	3	x	x	4	8	24	30	25	33	17	27
9	19	31	24	48	3	7	15	20	6	14	35	52	10	14	19	44
10	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11	10	12	x	x	11	16	x	x	4	8	28	34	9	14	23	32
12	5	6	12	18	3	6	8	9	5	8	27	32	8	11	35	40
13	7	9	16	20	6	8	13	15	x	x	x	x	x	x	x	x
14	8	8	17	22	10	14	15	19	x	x	x	x	x	x	x	x
15	8	11	10	11	4	8	11	14	x	x	x	x	x	x	x	x
16	x	x	26	40	x	x	22	26	18	29	x	x	11	15	x	x
17	3	4	13	15	4	4	11	20	47	115	33	56	13	17	24	36
18	16	21	16	20	19	43	20	33	x	x	x	x	x	x	x	x
19	15	21	x	x	12	20	x	x	6	8	x	x	3	7	x	x
20	80	146	30	96	13	31	31	35	x	x	x	x	x	x	x	x
21	53	67	16	30	15	53	18	24	17	28	13	15	25	31	9	12
22	34	42	15	30	7	14	17	20	17	20	x	x	16	22	x	x
23	92	140	11	17	19	25	11	19	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
25	22	36	22	28	25	45	35	55	18	34	x	x	19	22	x	x
26	7	11	24	30	11	14	30	36	x	x	24	26	x	x	22	28
27	x	x	x	x	x	x	x	x	8	11	23	28	8	11	21	30
28	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
29	4	6	x	x	4	4	x	x	15a	22a	17a	28a	38a	73a	27a	28a
30	16	38	x	x	3	7	x	x	6	8	16	20	22	43	13	18
31	48	90	28	40	3	6	27	31	5	6	18	20	24	45	16	22

x = no observations * = yellow line emission a = index computed from low weight data

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SOLAR FLAR

AUGUST 1963

OBSERVATORY	DATE AUG 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT.	APPROX MER DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg	CORR. AREA Sq. Deg	MAX. WIDTH Ha	MAX. INT *.	PROVISIONAL IONOSPHERIC EFFECT
	01	0010	0100	NO FLARE	PATROL											
	01	0130	0530	NO FLARE	PATROL											
ZURICH	01	0633 E	0636		N11	E38	6908	3 D	1	3	0633		2.00			
WENDEL	01	1115 E	1138		N12	W57	6905	23 D	1				4.00			
CAPRI S	01	1116	1215 D		N11	W55			1-	2	1131	.80	1.40			
MCMATH	01	1234	1315	1239	N12	W58	6905		1-	1	1239	.50	1.00			
SALTSJOBADN	01	1240	1250		N13	W57	6905	10 D	1	2		1.30	2.30			
SALTSJOBADN	01	1300	1310		N13	W57			1-	2		.80	1.40			
MCMATH	01	1325	1333	1326	N15	W56	6905		1-	1	1326	.20	.40			
	01	1425	1430	NO FLARE	PATROL											
LOCKHEED	01	1915	1920	1917	N14	E29			1-	2	1917	.20	.20		10	
MCMATH	01	1954 E	2020 D		N12	W60	6905		1-	1	1954	.30	.60			
LOCKHEED	01	2047	2100	2049	N14	E29			1-	2	2049	.20	.20		10	
LOCKHEED	01	2050	2130	2105	N16	E29			1-	2	2105	.20	.20		10	
	02	0205	0450	NO FLARE	PATROL											
HAUTE-PROV	02	0747	0837 D		N13	W68			1-							
WENDEL	02	1353 E	1435 D		N16	E39	6909	42 D	1+				6.00			
SAC PEAK	02	1355	1430 U	1405 U	N15	E39	6909	35 U	1	3		2.41	2.66		18	
CAPRI S	02	1404	1436		N13	E38			1-	3	1408	1.50	1.90			
LOCARNO	02	1405 E	1440		N15	E39	6909	35 D	1+	2						
SAC PEAK	02	1548	1603	1553	N11	W75			1-	3		.39	.41		18	
WENDEL	02	1552 E	1622 D		N12	W72	6905	30 D	1+				5.00			
HAUTE-PROV	02	1725	1745 D		N13	E40	6909	20 D	1		1730	2.40	3.00			
LOCKHEED	02	1727	1805	1737	N12	E38			1-	2	1737	1.00	1.00		20	
SAC PEAK	02	1732	1750 U	1745 U	N15	E36			1-	3		1.34	1.49		17	
WENDEL	02	1732 E	1814 D		N15	E36	6909	42 D	1+				6.00			
WENDEL	02	1806 E	1826 D		N12	W73	6905	20 D	1				4.00			
LOCKHEED	02	1810	1840	1817	N13	W70	6905	30	1	2	1817	1.10	2.20		20	
HONOLULU	02	1812	1835	1816	N13	W73	6905	23	1+	3	1816	1.85	4.10			
LOCKHEED	02	1910	1919	1913	N13	E37			1-	2	1913	.20	.20		10	
LOCKHEED	02	2342	2402	2350	N15	E37			1-	2	2350	.60	.60		10	
	03	0200	0440	NO FLARE	PATROL											
OTTAWA	03	1510	1519	1514	N11	W84			1-	2	1514	.52	1.73			
LOCKHEED	03	1837	1910	1851	N09	E18			1-	2	1851	.30	.30		10	
MCMATH	03	1858	1905	1900	N13	W90	6905		1-	1	1900	.10				
HONOLULU	03	1858	1908	1902	N13	W90			1-	3	1902	.31	1.10			
LOCKHEED	03	2116	2135	2123	N09	E21			1-	2	2123	.20	.20		10	
LOCKHEED	03	2250	2325	2302	N13	E03			1-	2	2302	.40	.40		10	
LOCKHEED	04	0030	0130	0050	N10	E16			1-	2	0050	.30	.30		10	
	04	0155	0430	NO FLARE	PATROL											
HAUTE-PROV	04	0623	0632		N08	E13			1-		0625	.40	.50			
HAUTE-PROV	04	0848	0948	0901	N09	E09	6909	60	1		0901	2.80	2.90			
ONDREJOV	04	0852	0938		N08	E11	6909	46	1	3	0914			2.50		
CAPRI S	04	0855	0938		N10	E12			1-	2	0901	1.10	1.20			
HAUTE-PROV	04	1012	1020		N14	E18			1-		1017	1.20	1.30			
MCMATH	04	1202	1305		N13	E14	6909		1-	2	1220	.30	.30			
SAC PEAK	04	1354	1400	1356	N14	E13			1-	2		.70	.68		17	
HAUTE-PROV	04	1354	1405	1357	N13	E12	6909	11	1		1357	3.00	3.20			

COMMERCE - STANDARDS - ... PRESS

SOLAR FLARES

AUGUST 1963

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
					APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg	MAX. WIDTH Hα	MAX INT %	
	AUG 1963	START	END	MAX. PHASE	LAT	MER DIST.										
→ MCMATH	04	1354	1410	1355	N13	E14	6909		1-	2	1355	.50	.50			
→ CAPRI S	04	1354	1420		N12	E15			1-	2	1402	1.40	1.50			
LOCKHEED	04	1628	1650	1635	N14	E13			1-	2	1635	.30	.30		20	
HAUTE-PROV	04	1631	1653	1638	N13	E14			1-		1638	1.00	1.10			
MCMATH	04	1632	1650	1634	N13	E13	6909		1-	2	1634	.30	.30			
SAC PEAK	04	1633 E	1648	1639	N14	E14			1-	2		.29	.27		17	
HUANCAYO	04	1637 E	1652	1637	N11	E15			1-	2	1640	1.80	1.80	2.30		
HAUTE-PROV	04	1730 E	1735 D		N12	E10			1-		1732	.70	.70			
LOCKHEED	04	1853	1915	1900	N14	E14			1-	2	1900	.20	.20		10	
MCMATH	04	1856	1908	1858	N13	E12	6909		1-	2	1858	.30	.30			
LOCKHEED	04	2124	2150	2131	N08	E04			1-	2	2131	.30	.30		10	
MCMATH	04	2127	2200 D	2130	N08	E04	6909		1-	2	2130	.50	.50			
MCMATH	04	2210	2240 D	2219	N08	E04	6909		1-	2	2219	.50	.50			
LOCKHEED	04	2215	2305	2220	N08	E04			1-	2	2220	.70	.70		20	
HONOLULU	04	2218	2228	2220	N08	E03			1-	3	2220	.72	.72			
HONOLULU	04	2240	2250	2242	N08	E03			1-	3	2242	.72	.72			
MCMATH	04	2240	2256 D	2245	N08	E04	6909		1-	2	2245	1.20	1.20			
HONOLULU	04	2246	2252	2248	N08	E04			1-	3	2248	1.03	1.03			
LOCKHEED	04	2312	2328	2316	N13	E05			1-	2	2316	.40	.40		10	
HONOLULU	04	2316	2322	2318	N09	E03			1-	3	2318	.83	.83			
	05	0210	0515	NO FLARE	PATROL											
HAUTE-PROV	05	0550	0555		N12	W19			1-		0552	.80	.80			
HAUTE-PROV	05	0602	0624		N14	E06			1-		0607	.80	.80			
CAPRI S	05	0609 E	0625		N14	E07			1-	2	0611	.80	.80			
HAUTE-PROV	05	0633 E	0718 D		N15	E05			1-		0641	.50	.50			
HAUTE-PROV	05	0702 E	0715 D		N08	W02			1-		0706	.60	.60			
LOCKHEED	05	1620 U	1640	1630	N09	W08			1-	1	1630	.30	.30		10	
MCMATH	05	1620	1652	1628	N10	W07	6909		1-	2	1628	.50	.50			
LOCKHEED	05	1707	1722	1710	N14	W04			1-	1	1710	.50	.50		10	
SAC PEAK	05	1710 E	1716	1712	N13	W03			1-	3		.29	.29		17	
MCMATH	05	1710	1722	1712	N13	W03	6909		1-	2	1712	.50	.50			
MCMATH	05	1815	1917		N10	W08	6909		1-	2	1905	.20	.20			
LOCKHEED	06	0042	0052	0045	N09	W12			1-	1	0045	.20	.20		10	
LOCKHEED	06	0100	0112 U	0103	N14	W26			1-	1	0103	.30	.30		10	
	06	0115	0500	NO FLARE	PATROL											
ISTANBUL	06	0803	0811		N09	W15			1-							
ONDREJOV	06	0855	0927 D	0900	N15	W10	6909	32 D	2	2	0900			2.90		
LOCARNO	06	0855	0950	0915	N13	W11	6909	55	2	2	0915		5.00			
HAUTE-PROV	06	0855	1006 D		N12	W12	6909	71 D	2		0911	9.40	9.00			
ATHENES	06	0857	0915		N13	W11			1-	3		2.00	2.00			
CAPRI S	06	0858 E	0948		N13	W09	6909	50 D	2	2	0911	6.00	6.00			
WENDEL	06	0900 E	1004 D		N12	W12	6909	64 D	2				12.00			
ARCETRI	06	0903 E	1005		N16	W13	6909	62 D	2	3	0917	6.54	6.80			
	06	1020	1030	NO FLARE	PATROL											
	06	1040	1045	NO FLARE	PATROL											
	06	1055	1100	NO FLARE	PATROL											
WENDEL	06	1223	1258		N09	W17	6909	35	1				3.00			
MCMATH	06	1343	1430 D	1353	N12	W15	6909		1-	1	1353	1.20	1.20			
WENDEL	06	1344	1438		N11	W14	6909	54	1+				5.00			

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CAPRI S	06	1350 E	1433		N12	W06	6909	43 D	1	2	1403	1.90	2.10			
LOCKHEED	06	1939 U	1950 U	1943 U	N09	W21			1-	1	1943	.30	.30		10	
SAC PEAK	06	1940	1942 D	1941	N10	W21			1-	1		.29	.29		17	
HONOLULU	06	1940	1948	1942	N11	W21			1-	3	1942	1.10	1.10			
MCMATH	06	1941	1950		N10	W21	6909		1-	2	1942	.30	.30			
LOCKHEED	06	2251 U	2322	2257 U	N12	W23			1-	1	2257	.20	.20		10	
	07	0140	0500	NO FLARE	PATROL											
ISTANBUL	07	0728 E	0736 D		N15	W44			1-							
	07	1240	1250	NO FLARE	PATROL											
SAC PEAK	07	1624 E	1637	1626 U	N13	W48			1-	2		.39	.47		16	
	07	1650	1655	NO FLARE	PATROL											
	07	2235	2400	NO FLARE	PATROL											
	08	0105	0110	NO FLARE	PATROL											
	08	0145	0555	NO FLARE	PATROL											
	08	0900	0915	NO FLARE	PATROL											
	08	1105	1115	NO FLARE	PATROL											
	08	1120	1135	NO FLARE	PATROL											
	08	1150	1155	NO FLARE	PATROL											
	08	1315	1320	NO FLARE	PATROL											
	08	1325	1335	NO FLARE	PATROL											
	08	1355	1400	NO FLARE	PATROL											
	08	1500	1505	NO FLARE	PATROL											
	08	1510	1515	NO FLARE	PATROL											
	08	1540	1545	NO FLARE	PATROL											
	08	1640	1645	NO FLARE	PATROL											
	08	1715	1720	NO FLARE	PATROL											
	08	1810	1820	NO FLARE	PATROL											
HONOLULU	08	2322	2330	2324	N37	W67			1-	2	2324	.93	1.70			
	09	0135	0510	NO FLARE	PATROL											
	09	0900	0905	NO FLARE	PATROL											
	09	0920	0935	NO FLARE	PATROL											
	09	0940	1030	NO FLARE	PATROL											
	09	1150	1200	NO FLARE	PATROL											
	09	1250	1310	NO FLARE	PATROL											
	09	1445	1450	NO FLARE	PATROL											
LOCKHEED	09	2234	2340	2245	N07	W80	6908	66	1	2	2245	.90	2.30		20	
LOCKHEED	09	2305	2324	2313	N07	W85			1-	2	2313	.50	1.50		10	
	10	0035	0150	NO FLARE	PATROL											
	10	0215	0445	NO FLARE	PATROL											
	11	0205	0505	NO FLARE	PATROL											
ARCETRI	11	1000 E			N10	W86			1-	1	1000	.33	1.43			
LOCKHEED	11	1708	1715	1711	N07	W85			1-	2	1711	.10	.30		10	
LOCKHEED	11	1827	1850	1841	N19	W90	6909	23	2	2	1841	1.30	6.50		10	
LOCKHEED	11	1935	2000	1948	N10	W90	6909	25	2	2	1948	1.30	6.50		10	
LOCKHEED	11	2357	0006	0001	N18	W90	6909	9	1	2	0001	1.00	5.00		10	

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	12	0200	0600	NO FLARE	PATROL											
	12	0915	0930	NO FLARE	PATROL											
	12	0950	1005	NO FLARE	PATROL											
	12	1010	1030	NO FLARE	PATROL											
	12	1045	1100	NO FLARE	PATROL											
	12	1105	1200	NO FLARE	PATROL											
	12	1745	2020	NO FLARE	PATROL											
	13	0210	0505	NO FLARE	PATROL											
HAUTE-PROV	13	0735	0745		S18	E68			1-		0737	.60				
HAUTE-PROV	13	0906	0935		S18	E68			1-		0916	.60				
	13	1000	1015	NO FLARE	PATROL											
	13	1020	1055	NO FLARE	PATROL											
	13	1110	1155	NO FLARE	PATROL											
	13	1210	1255	NO FLARE	PATROL											
	13	1300	1345	NO FLARE	PATROL											
	14	0210	0500	NO FLARE	PATROL											
	14	1110	1130	NO FLARE	PATROL											
CAPRI S	14	1224	1244		S10	E53			1-	3	1232	.70	1.10			
	14	1345	1350	NO FLARE	PATROL											
	14	1355	1415	NO FLARE	PATROL											
	14	1500	1520	NO FLARE	PATROL											
	14	1540	1550	NO FLARE	PATROL											
	14	1600	1625	NO FLARE	PATROL											
	14	2330	2335	NO FLARE	PATROL											
	15	0205	0515	NO FLARE	PATROL											
	15	0525	0605	NO FLARE	PATROL											
ARCETRI	15	0830 E	0905 O		N10	E70			1-	3	0839	.56	1.28			
	15	0910	1135	NO FLARE	PATROL											
MCMATH	15	1357	1500	1402	N11	E05	6923		1-	2	1402	.60	.60			
	15	1740	1745	NO FLARE	PATROL											
HONOLULU	16	0116 E	0120 D	0116	S12	E31	6924	4 D	1	3	0116	2.30	2.50			
	16	0130	0455	NO FLARE	PATROL											
ARCETRI	16	0954 E	1005 D		S10	E22			1-	2	0954	1.30	1.45			
LOCKHEED	16	1640	1740	1650	S12	E21			1-	2	1650	.40	.40		10	
LOCKHEED	16	1640	1740	1710	S12	E21			1-							
MCMATH	16	1642	1653	1646	S13	E22	6924		1-	2	1646	.60	.70			
MCMATH	16	1704 E	1738		S13	E22	6924		1-	2	1712	.80	.90			
MCMATH	16	2130 E	2150 D		S13	E20	6924		1-	2	2130	.40	.40			
	17	0000	0015	NO FLARE	PATROL											
LOCKHEED	17	0055	0120	0101	S11	E17			1-	2	0101	.40	.40		10	
HONOLULU	17	0057	0107	0100	S11	E17			1-	2	0100	1.85	1.90			
	17	0155	0510	NO FLARE	PATROL											
	17	0515	0550	NO FLARE	PATROL											
	17	0815	0900	NO FLARE	PATROL											
	17	0905	1115	NO FLARE	PATROL											
	17	1425	1445	NO FLARE	PATROL											

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ONOREJOV	17	1446 E	1458 O		S12	E10	6924	12 O	1	1	1447			2.40		
WENOEL	17	1446	1502		S12	E10	6924	16	1				3.00			
	17	1500	1610	NO FLARE	PATROL											
WENDEL	17	1540	1618 O		S12	E09	6924	38 O	1+				5.00			
LOCKHEED	17	1610 E	1640	1612 U	S12	E09			1-	2	1612	1.20	1.20		30	S-SWF
LOCKHEED	17	1815	1842	1825	S13	E05			1-	2	1825	.60	.60		10	
LOCKHEED	17	1908	1916	1912	N12	E34			1-	2	1912	.20	.20		10	
LOCKHEED	17	2104	2110	2106	S08	E85			1-	2	2106	.10	.30		10	
LOCKHEED	17	2107	2128	2115	N09	E39			1-	2	2115	.50	.60		10	
LOCKHEED	17	2123	2140	2127	S13	E05			1-	2	2127	.20	.20		10	
LOCKHEED	17	2155	2218	2205	S13	E05			1-	2	2205	.40	.40		10	
LOCKHEED	17	2257	2355	2302	S13	E04	6924	58	1	2	2302	1.20	1.20		20	
HONOLULU	17	2258	2315	2301	S12	E06	6924	17	1+	3	2301	4.30	4.30			
LOCKHEED	18	0147	0157	0150	S13	E05			1-	1	0150	.40	.40		10	
	18	0200	0515	NO FLARE	PATROL											
HAUTE-PROV	18	0653	0659 O		S14	E03			1-		0656	.40	.50			
	18	0900	0910	NO FLARE	PATROL											
	18	0940	0950	NO FLARE	PATROL											
	18	0955	1105	NO FLARE	PATROL											
HAUTE-PROV	18	1108	1123	1109	S10	E85			1-							
HAUTE-PROV	18	1142	1230		S10	E85			1-							
OTTAWA	18	1258	1327	1312	S08	E80	6932	29	1	2	1312	.93	2.51			
WENOEL	18	1258 E	1335 O		S09	E76	6932	37 D	1+				5.00			
HAUTE-PROV	18	1300	1335		S10	E85			1-							
MCMATH	18	1309 E	1320 O		S06	E85	6932		1-	2	1309	.30	1.50			
HAUTE-PROV	18	1506	1521	1513	S14	E01			1-							
OTTAWA	18	1509	1525	1515	S14	W04			1-	2	1515	1.28	1.28			
MCMATH	18	1511	1523	1515	S14	W05	6924		1-	1	1515	.50	.50			
LOCKHEED	18	1713	1723	1716	S12	W06			1-	2	1716	.30	.30		20	
MCMATH	18	1718 E	1719 O		S12	W07	6924		1-	1	1718	.30	.30			
HAUTE-PROV	18	1752	1800 O		S13	W05	6924	8 D	1+		1759	2.90	3.20			
LOCKHEED	18	1757	1845	1801	S13	W06	6924	48	1	3	1801	2.10	2.10		30	
OTTAWA	18	1758	1805 O	1800	S13	W07	6924	7 D	2	3	1800	5.95	5.95			
MCMATH	18	1800 E	1815 O		S12	W08	6924	15 O	1	1	1800	1.90	2.10			S-SWF
SAC PEAK	18	1804 E	1838	1803 U	)□	□			1-			1.57	1.55		17	
HONOLULU	18	1816 E	1844		S12	W07	6924	28 D	1	2	1816	2.06	2.06			
LOCKHEED	18	2134	2210	2138	S12	W08			1-	2	2139	1.00	1.00		30	
HONOLULU	18	2136	2154	2138	S12	W07	6924	18	1+	2	2140	3.10	3.10			
LOCKHEED	18	2300	2320	2310	S06	W15			1-	2	2310	.30	.30		10	
HONOLULU	18	2324	2332	2326	S13	W07			1-	2	2326	1.24	1.24			
LOCKHEED	18	2324	2333	2327	S12	W09			1-	2	2327	.50	.50		20	
HONOLULU	19	0104	0132	0108	S12	W10	6924	28	2	2	0108	5.16	5.16			
	19	0200	0605	NO FLARE	PATROL											
ISTANBUL	19	0710	0720		S07	W16			1-							
	19	0855	0940	NO FLARE	PATROL											
	19	0950	1000	NO FLARE	PATROL											
	19	1015	1055	NO FLARE	PATROL											
	20	0205	0505	NO FLARE	PATROL											

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MCMATH	20	1354	1440	1358	S10	W34	6924		1-	1	1358	.80	1.00			
CAPRI S	20	1355	1419		S10	W34			1-	2	1406	1.20	1.40			
HAUTE-PROV	20	1358	1415		S12	W30			1-							
OTTAWA	20	1406 E	1432		S11	W33	6924	26 D	1	1	1411	3.03	3.21			
MCMATH	20	2120	2128	2121	S12	E50	6932		1-	2	2121	.10	.20			
	20	2300	2350	NO FLARE	PATROL											
	21	0150	0600	NO FLARE	PATROL											
CAPRI S	21	0606 E	0655 D		N09	W16			1-	1	0609	.90	.90			
CAPRI S	21	1202 E	1225		N10	W16	6927	23 D	1	2	1205	2.00	2.20			
MCMATH	21	1207	1227	1210	N07	W18	6927		1-	2	1210	.80	.80			
MCMATH	21	1327	1358	1340	N07	W18	6927		1-	2	1340	.70	.70			
MCMATH	21	1408	1420	1411	S11	E39	6932		1-	2	1411	.50	.70			
HAUTE-PROV	21	1418	1435		S10	W53			1-		1425	1.00	1.70			
OTTAWA	21	1419	1435	1429	S10	W51	6924	16	1	3	1429	1.81	2.30			
CAPRI S	21	1420 E	1440 D		S10	W45	6924	20 D	1	1	1430	1.50	2.10			
MCMATH	21	1421	1444	1429	S11	W51	6924		1-	2	1429	.80	1.40			
ZURICH	21	1425 E	1438		S09	W49	6924	13 D	1	3	1430		2.00			
MCMATH	21	1429	1445	1430	S11	E39	6932		1-	2	1430	.30	.50			
CAPRI S	21	1445 E	1516 D		N10	W16			1-	1	1452	2.00	2.10			
CAPRI S	21	1445 E	1522 D		S08	W10			1-	1	1500	1.50	1.50			
MCMATH	21	1521	1605		N08	W20	6927		1-	1	1540	.50	.50			
MCMATH	21	1556	2035		S07	W13	6930		1-	1	1601	.30	.30			
MCMATH	21	1612	1730	1616	N08	W20	6927		1-	1	1616	.30	.30			
MCMATH	21	1738	1802	1747	N08	W22	6927		1-	2	1747	.60	.60			
MCMATH	21	1742	1755	1744	S09	E40	6932		1-	2	1744	.40	.50			
HONOLULU	21	1808	1820	1810	N07	W21			1-	2	1810	.93	.93			
MCMATH	21	1845	1905 D		N08	W23	6927		1-	1	1848	.50	.60			
LOCKHEED	21	2035	2055	2037	S09	W53	6924	20	1	2	2037	2.70	3.60		20	
MCMATH	21	2036	2052	2038	S10	W55	6924	16	1+	2	2038	2.00	3.80			
LOCKHEED	21	2337	2400	2345	S10	W19			1-	2	2345	.30	.30		10	
	22	0005	0025	NO FLARE	PATROL											
	22	0035	0045	NO FLARE	PATROL											
	22	0115	0505	NO FLARE	PATROL											
HAUTE-PROV	22	0727	0745		S10	W60			1-							
ARCETRI	22	0925	1000 D		S10	W60			1-	2	0943	.29	.53			
ARCETRI	22	0915	0944 D		N08	W33			1-	2	0930	1.50	1.79			
ARCETRI	22	0937	0942		N09	W29			1-	2	0942	.36	.41			
HAUTE-PROV	22	0942	0945		N08	W29			1-							
WENDEL	22	1448 E	1502 D		S06	W30			1-							
SAC PEAK	22	1543	1617	1610	S15	W61			1-	2		.43	.72		16	
SAC PEAK	22	1910	1941 D	1915	S15	W61			1-	2		.43	.72		16	
LOCKHEED	23	0032	0053	0035	N08	W37			1-	2	0035	.30	.30		10	
	23	0235	0530	NO FLARE	PATROL											
	23	1710	1725	NO FLARE	PATROL											
LOCKHEED	23	2210	2230	2215	S05	W48			1-	2	2215	.40	.90		10	
	24	0125	0600	NO FLARE	PATROL											
	24	1030	1040	NO FLARE	PATROL											

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	24	1045	1055	NO FLARE	PATROL											
ONDREJOV	24	1144	1153		N07	W57			1-	3	1146			2.10		
OTTAWA	24	1408	1424	1416	S14	W90			1-	2	1416	1.05				
LOCKHEED	24	1643	1656	1646	S10	W03			1-	2	1646	.90	.90		10	
HONOLULU	24	2336	2343	2337	N08	W64			1-	2	2337	.62	.62			
	25	0200	0625	NO FLARE	PATROL											
OTTAWA	25	1139	1153	1142	N05	W74			1-	1	1142	.64	1.37			
MCMATH	25	1140 E	1200	1143	N05	W75	6927	20 D	1	1	1143	.70	2.60			
MCMATH	25	1415	1423	1418	S06	W71	6930		1-	1	1418	.30	1.10			
HONOLULU	25	1914	1920	1916	N15	W16			1-	2	1916	.31	.31			
LOCKHEED	25	2037	2053	2043	S06	W85			1-	2	2043	.30	.90		10	
MCMATH	25	2206	2214	2209	S06	W89	6930		1-	1	2209	.10				
	26	0200	0600	NO FLARE	PATROL											
WENDEL	26	0637 E	0647 D		N08	W83			1-							
WENDEL	26	0832 E	0840 D		N08	E72			1-							
WENDEL	26	1059	1125		N08	E70	6942	26	1				3.00			
MCMATH	26	1355	1418		N08	E72	6942		1-	1	1400	.10	.30			
OTTAWA	26	1703	1710 D	1706	N10	E70	6942	7 D	1	2	1706	1.17	2.21			
MCMATH	26	1703	1711	1706	N08	E70	6942		1-	1	1706	.40	1.20			
MCMATH	26	1754	1805	1758	S12	E21	6944		1-	1	1758	.30	.30			
LOCKHEED	26	1820	1920	1830	S12	E20			1-	2	1830	.30	.30		10	
LOCKHEED	26	2208	2216	2211	N09	E68			1-	2	2211	.20	.40		10	
LOCKHEED	26	2230	2241	2234	N09	E65			1-	2	2234	.40	.70		10	
LOCKHEED	26	2302	2330	2306	N06	E66			1-	2	2306	.40	.70		10	
HONOLULU	26	2304	2318	2306	N06	E64			1-	2	2306	.83	1.40			
LOCKHEED	27	0100	0125	0113	N09	E65			1-	2	0113	.30	.50		10	
	27	0210	0540	NO FLARE	PATROL											
	27	0550	0600	NO FLARE	PATROL											
	27	0800	0805	NO FLARE	PATROL											
	27	0810	0845	NO FLARE	PATROL											
	27	0915	0925	NO FLARE	PATROL											
WENDEL	27	0919 E	0936 D		N08	E61			1-							
	27	1005	1100	NO FLARE	PATROL											
MCMATH	27	1140 E	1233		N08	E60	6942	53 D	1	2	1223	1.10	2.20			
OTTAWA	27	1221	1232	1223	N09	E60	6942	11	1	3	1223	2.16	3.20			
LOCKHEED	28	0009	0028	0017	S13	E04			1-	2	0017	.10	.10		10	
	28	0200	0535	NO FLARE	PATROL											
	28	0555	0600	NO FLARE	PATROL											
	28	0815	0850	NO FLARE	PATROL											
	28	0935	1000	NO FLARE	PATROL											
	28	1250	1255	NO FLARE	PATROL											
	28	1500	1510	NO FLARE	PATROL											
	29	0045	0610	NO FLARE	PATROL											
	29	0800	0810	NO FLARE	PATROL											
	29	0820	0825	NO FLARE	PATROL											
	29	0830	0840	NO FLARE	PATROL											

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

AUGUST 1963

OBSERVATORY	DATE AUG 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX WIDTH Hg	MAX. INT %	PROVISIONAL IONOSPHERIC EFFECT
	29	0845	0850	NO FLARE	PATROL											
	29	0855	0905	NO FLARE	PATROL											
	29	0910	0920	NO FLARE	PATROL											
	29	0925	0935	NO FLARE	PATROL											
	29	0945	0950	NO FLARE	PATROL											
	29	0955	1005	NO FLARE	PATROL											
	29	1010	1135	NO FLARE	PATROL											
	29	1215	1240	NO FLARE	PATROL											
	29	1245	1305	NO FLARE	PATROL											
	29	1315	1320	NO FLARE	PATROL											
	29	1325	1400	NO FLARE	PATROL											
	29	1545	1550	NO FLARE	PATROL											
	29	1605	1610	NO FLARE	PATROL											
	30	0155	0525	NO FLARE	PATROL											
	30	0545	0600	NO FLARE	PATROL											
	30	1005	1120	NO FLARE	PATROL											
	30	1705	1735	NO FLARE	PATROL											
	30	1750	1800	NO FLARE	PATROL											
	30	1850	1855	NO FLARE	PATROL											
	30	2110	2400	NO FLARE	PATROL											
	31	0000	0005	NO FLARE	PATROL											
	31	0010	0025	NO FLARE	PATROL											
LOCKHEED	31	0023 E	0045	0023 U	N09	E16			1-	2	0023	1.00	1.00		20	
	31	0130	0700	NO FLARE	PATROL											
	31	0815	0850	NO FLARE	PATROL											
	31	0930	0945	NO FLARE	PATROL											
	31	1005	1400	NO FLARE	PATROL											
	31	1540	1555	NO FLARE	PATROL											
	31	1615	1620	NO FLARE	PATROL											
	31	1630	1655	NO FLARE	PATROL											
	31	1700	1705	NO FLARE	PATROL											

COMMERCE - STANDARDS - BOULDER

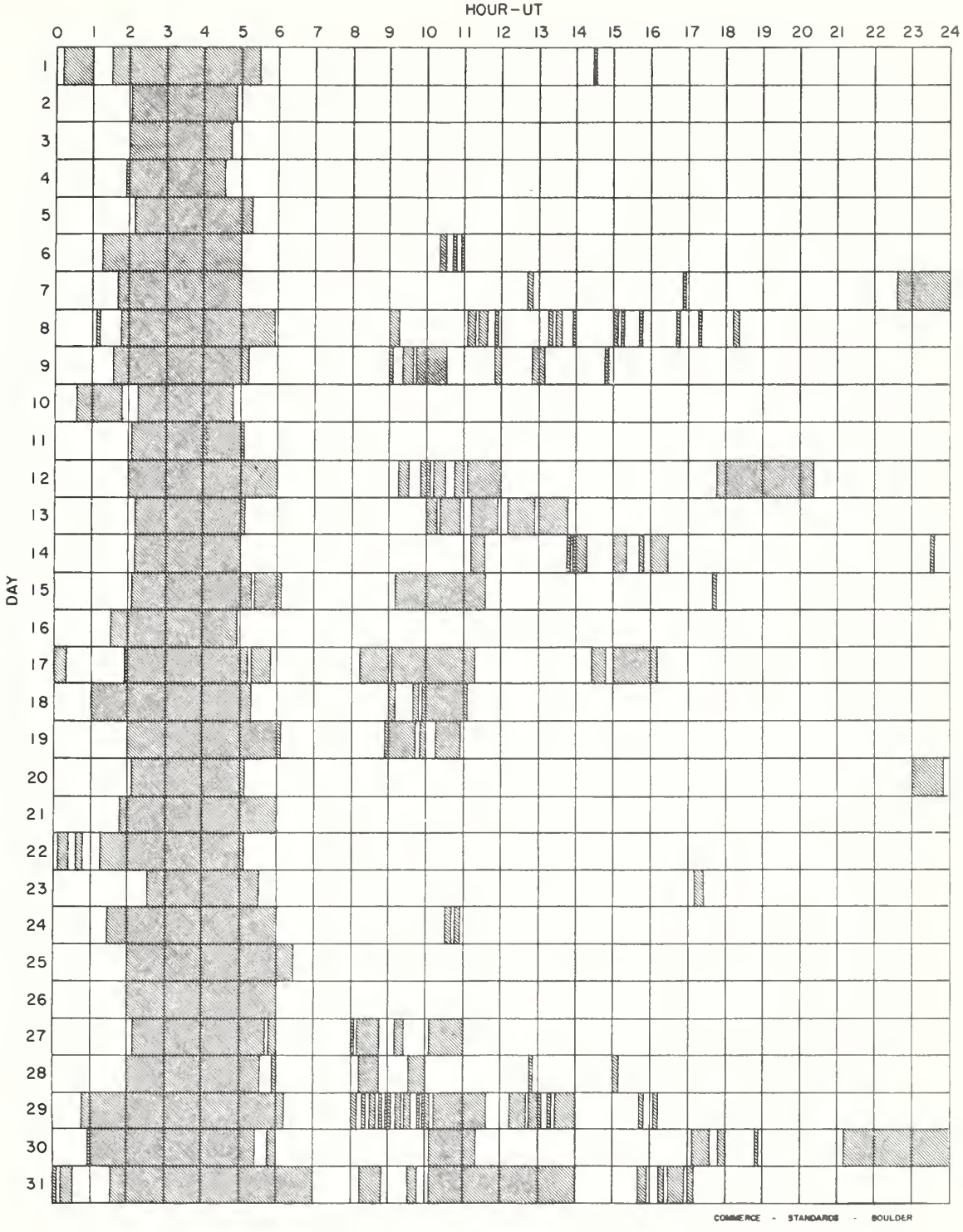
ATHENES	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST den BERGH, NETHERLANDS
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN	NIZMIR	KRASNAYA PAKHRA, USSR
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	KIEV KO	KIEV GAO, USSR	SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	KIEV KY	KIEV UNIVERSITY, USSR	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	LOCKHEED	LOS ANGELES, CALIF., USA	SCHAUINS	SCHAUINSLAND, GFR
CRIMÉE	SIMEIZ, USSR	MCMATH	MCMATH-HULBERT PONTIAC, MICH., USA	TACHKENT	TASHKENT, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX, ENGLAND	MOSCOU	MOSCOW-GAISH, USSR	WENDEL	WENDELSTEIN, GFR
HTE-PROVEN	HAUTE-PROVENCE	NEW SCHAUIN	FREIBURG, GFR		

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

AUGUST 1963



Observatories Include:

Arcetri	Herstmonceux	Istanbul	Ondrejov
Athenes	Honolulu	Lockheed	Ottawa
Haute-Provence	Huancayo	McMath-Hulbert	Sacramento Peak

SOLAR FLARES

MAY 1963

OBSERVATORY	DATE MAY 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
	01	0155	0300	NO FLARE	PATROL											
	01	0440	0510	NO FLARE	PATROL											
MANILA	01	0513	0655	0542	N13	E46	6790	102	3			25.80				
ONDREJOV	01	0525	0713	0704	N15	E48	6790	108	2+	3	0546			3.70		S1-S-SWF
KODAIKNL	01	0600 E	0611 D		N17	E45	6790	11 D	2U	1	0610			1.92		
HTE-PROVEN	01	0608 E	0810		N15	E46	6790	122 D	3		0608	8.80	13.70			
CAPETOWN	01	0639 E	0800		N16	E46	6790	81 D	2		0639	6.70	10.40			
NIZMIR	01	0656 E	0740	0659	N15	E46	6790	44 D	1+			17.12		.62		
	02	0230	0240	NO FLARE	PATROL											
	02	0250	0255	NO FLARE	PATROL											
MANILA	02	0533	0538		N15	E30			1-							
MANILA	02	0545	0548		N15	E30			1-							
UCCLE	02	1530	1643		N21	E24			1-							
UCCLE	02	1725	1729 D		N18	E31			1-							
	03	2335	2340	NO FLARE	PATROL											
CAPRI-F	04	0617 E	0655 D	0617	N09	E64			1-	3	0617	.33	.66			
MANILA	04	0628 E	0645		N08	E65			1-							
	05	0145	0205	NO FLARE	PATROL											
	05	0210	0225	NO FLARE	PATROL											
	05	0230	0235	NO FLARE	PATROL											
MANILA	05	0314	0326	0319	N08	E53			1-							
MANILA	05	0328	0335	0330	N08	E53			1-							
	05	0410	0435	NO FLARE	PATROL											
	05	0440	0445	NO FLARE	PATROL											
MANILA	05	0813 E	0825	0817	N14	W05			1-							
HTE-PROVEN	05	1047	1110 D		N16	W11			1-							
CAPETOWN	05	1057	1117	1059	N16	W09			1-		1059	1.10	1.20			
UCCLE	05	1107 E	1115		N15	W18			1-							
CLIMAX	06	0005	0031 D	0014	N17	W18			1-			.70	.70			
	06	0150	0220	NO FLARE	PATROL											
TACHKENT	06	0502	0530	0504	N15	W21			1-	2	0504	.67	.08		60	
MANILA	06	0503	0526	0501	N15	W19	6790	23	1							
HTE-PROVEN	06	0509	0529		N17	W23			1-							
HTE-PROVEN	06	0552	0602		N17	W23			1-							
KHARKOU	06	0917 E	1050	1000	N10	E37	6794	93 D	1+	3	1023	8.01	8.80	1.40		
UCCLE	06	0944	1030		S15	E20			1-							
ONDREJOV	06	0950 E	1010 D		S14	E18			1-	1	1000			1.80		
KHARKOU	06	1105 E	1209		N10	E37	6794	64 D	1+	3	1117	8.01	8.80	1.40		
UCCLE	06	1142 E			N17	W24			1-							
CAPRI-F	06	1146 E	1152 D	1146	S13	E18			1-	2	1146	.25	.27			
CAPETOWN	06	1237	1257	1240	N16	W24			1-		1240	1.10	1.30			
CLIMAX	06	1238 E	1258		N15	W22			1-		1240	.70	.70			
MANILA	06	2350 E	0037	0013	N15	W17	6790	47 D	1							
CLIMAX	07	0046	0053	0050	S15	E09			1-			.60	.60			
UCCLE	07	1111	1115		S14	E04			1-							

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

MAY 1963

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION APPROX.		LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR AREA Sq. Deg	MEASUREMENTS MAX. WIDTH Ha	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
	MAY 1963	START	END	MAX PHASE	LAT.	MER DIST										
UCCLE	07	1152	1155		S14	E04			1-							
UCCLE	07	1214	1244		S13	W01			1-							
UCCLE	07	1312 E	1329		S13	E01			1-							
UCCLE	07	1500	1528		S14	E00	6796	28	1			2.00	2.60			
CAPRI-F	07	1503 E	1545 D	1511	S14	E03	6796	42 D	1	2	1511	3.00	3.10			
UCCLE	07	1548	1602		S14	W01			1-							
UCCLE	07	1640	1645 D		S14	W01			1-							
	07	1855	1900	NO FLARE	PATROL											
	07	1905	1925	NO FLARE	PATROL											
	07	1935	1945	NO FLARE	PATROL											
	07	1950	2050	NO FLARE	PATROL											
	07	2125	2155	NO FLARE	PATROL											
	07	2210	2300	NO FLARE	PATROL											
	08	0200	0205	NO FLARE	PATROL											
	08	0210	0220	NO FLARE	PATROL											
MANILA	08	0515	0525	0518	S05	E90			1-							
CAPRI-F	08	0602 E	0606 D	0602	N01	W24			1-	2	0602	.25	.27			
UCCLE	08	0841	0856	0843	S14	W12			1-		0843					
	09	0200	0215	NO FLARE	PATROL											
	09	0220	0240	NO FLARE	PATROL											
CAPRI-F	09	1045 E	1120 D	1045	S13	W22			1-	3	1045	.50	.53			
CLIMAX	09	1626	1638	1630	S13	W25			1-			.20	.20			
CAPRI-F	09	1635 E	1642 D	1635	S13	W21			1-	1	1642	.50	.55			
CLIMAX	09	1811	1819	1813	S13	W25			1-			1.30	1.30			
CLIMAX	09	1954	2000 D		S13	W25			1-		1958	.10	.10			
CLIMAX	09	2057	2109	2103	S13	W25			1-			.20	.20			
MANILA	10	0105	0112	0109	S10	W32			1-							
	10	0215	0245	NO FLARE	PATROL											
	10	0435	0450	NO FLARE	PATROL											
	10	0555	0605	NO FLARE	PATROL											
ONDREJOV	11	1417 E	1445 D		S09	E43			1-	2	1428			2.60		
CAPRI-F	11	1458 E	1500 D	1458	S13	W51			1-	1	1458	.50	.71			
MANILA	12	0100	0106	0103	S09	W55			1-							
	12	0145	0155	NO FLARE	PATROL											
	12	0200	0205	NO FLARE	PATROL											
	12	0215	0225	NO FLARE	PATROL											
HTE-PROVEN	12	0517	0548		S08	E34			1-							
SCHAUINS	12	0728 E	0733 D		N12	W59			1-	2			2.00			
MANILA	12	0900	0912	0905	N06	E90			1-							
	13	0140	0215	NO FLARE	PATROL											
	13	0220	0225	NO FLARE	PATROL											
	13	0230	0240	NO FLARE	PATROL											
KODAIKNL	13	0240 E	0300	0246	N11	E17	6802	20 D	1	2	0246	4.50	4.70	1.60	122	
	13	0355	0405	NO FLARE	PATROL											
HTE-PROVEN	13	0646	0708		N09	E90			1-							

SOLAR FLARES

MAY 1963

OBSERVATORY	DATE MAY 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT.	APPROX MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS AREA Sq Deg	CORR. AREA Sq Deg	MAX WIDTH Ho	MAX INT. %	PROVISIONAL IONOSPHERIC EFFECT
HTE-PROVEN	13	0733 E	0741 D		N09	E90			1-							
UCCLE	13	1418 E	1544 D		N08	E88	6805	86 D	1+			3.00	7.00			
CLIMAX	13	2230	2242	2235	N10	E80	6805	12	1			.90	2.20			
	14	0200	0205	NO FLARE	PATROL											
	14	0215	0230	NO FLARE	PATROL											
UCCLE	14	1411	1419 D		N07	E74			1-							
	15	0150	0255	NO FLARE	PATROL											
MANILA	15	0204	0230	0215	N10	W10	6802	26	1							
CRIMEE	15	0656	0746	0708	N09	E63	6805	50	1	1	0708	1.34				
CAPETOWN	15	0659	0732	0707	N09	E61	6805	33	1		0707	1.10	2.30			S1-S-SWF
MANILA	15	0702 E	0724	0707	N05	E58	6805	22 D	1							
CAPETOWN	15	1139 E	1152 D		N10	W14			1-		1142	1.50	1.60			
CAPRI-F	15	1142 E	1156	1142	N10	W14	6802	14 D	1	2	1142	1.00	1.06			
CAPETOWN	15	1249	1314	1255 U	N12	W85	6794	25	1		1255	.60				
CLIMAX	15	1649	1705	1653	N03	W88			1-			.40	1.10			
CLIMAX	15	1711	1720	1715	N12	W17			1-			1.30	1.30			
CLIMAX	15	1940	1948	1943	N12	W18			1-			.60	.60			
	15	2305	2310	NO FLARE	PATROL											
CLIMAX	16	0057	0106 D	0103	N10	E50			1-			.60	.80			
MANILA	16	0125 E	0138	0128	N05	E45			1-							
	16	0130	0155	NO FLARE	PATROL											
	16	0205	0230	NO FLARE	PATROL											
	16	0240	0300	NO FLARE	PATROL											
MANILA	16	0559 E	0602	0612	N06	E44			1-							
MANILA	16	0859 E	0906	0859	N06	E42			1-							
ONDREJOV	16	0900	0905	0901	N09	E43			1-	3	0901					
UCCLE	16	1052	1059		N05	E45			1-							
UCCLE	16	1345 E	1412		S09	W33			1-							
UCCLE	16	1428	1442		N06	E45			1-							
MANILA	17	0135	0154	0139	N12	W13	6803	19	1							
	17	0200	0315	NO FLARE	PATROL											
	17	0325	0450	NO FLARE	PATROL											
MANILA	17	0521	0526	0523	N12	W15			1-							
CLIMAX	17	1945 E	2000	1948	N06	E22			1-			1.60	1.60			
	18	0115	0140	NO FLARE	PATROL											
	18	0150	0220	NO FLARE	PATROL											
	18	0230	0235	NO FLARE	PATROL											
CAPETOWN	18	0717	0736	0720	N10	E20			1-		0720	1.20	1.30			
HTE-PROVEN	18	0718	0724		N09	E18			1-							
NIZMIR	18	0718	0727	0720	N09	E21			1-			1.34		.65		
CAPRI-F	18	0723 E	0735	0723	N09	E19			1-	3	0724	1.00	1.06			
HTE-PROVEN	18	0746	0755		N09	E12			1-							
CAPRI-F	18	0751 E	0757 D	0751	N07	E13			1-	1	0751	.33	.31			
BAKOU	18	0930 E	1027 D	0937	N11	W59	6802	57 D	1	2		1.82			50	
MANILA	19	0030	0044	0035	S05	W55			1-							

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

MAY 1963

OBSERVATORY	DATE MAY 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT.	MER DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS AREA Sq. Deg	CORR. AREA Sq. Deg	MAX. WIDTH He	MAX. INT	PROVISIONAL IONOSPHERIC EFFECT
	19	0030	0400	NO FLARE	PATROL											
MANILA	19	0036	0045	0040	N05	E06			1-							
MANILA	19	0158	0208	0201	N14	W51			1-							
MANILA	19	0303	0315		N14	W51	6803	12	)							
MANILA	19	0350	0403	0355	N14	W52			1-							
	19	0435	0445	NO FLARE	PATROL											
	19	0525	0530	NO FLARE	PATROL											
HTE-PROVEN	19	0544	0546		N09	W02			1-							
MANILA	19	0544	0553	0540	N05	E03			1-							
ABASTUMANI	19	0700	0712 D	0702	N08	E01			1-	2		1.62	1.70		70	
CAPETOWN	19	0702	0714	0703	N09	E00			1-		0703	1.60	1.60			
HTE-PROVEN	19	0703	0712 D		N09	W02			1-							
MANILA	19	0710 E	0715		N05	E02	6805	5 D	1							
CAPETOWN	19	0939	0946	0941	N14	W48			1-		0941	.80	1.20			
CAPRI-F	19	1404 E	1412 D	1404	N14	W48			1-	2	1408	1.00	1.50			
	19	1955	2000	NO FLARE	PATROL											
	19	2005	2010	NO FLARE	PATROL											
	19	2135	2315	NO FLARE	PATROL											
	20	0140	0150	NO FLARE	PATROL											
	20	0155	0200	NO FLARE	PATROL											
CAPETOWN	20	0649	0701	0649	N12	W90			1-		0649	.20				
CAPETOWN	20	0655	0714	0658	N15	W61	6803	19	1		0658	1.10	2.30			
MANILA	20	0716	0728	0720	N03	W13			1-							
NIZMIR	20	0718	0720 D	0730	N11	W62	6803	2 D	1			1.34		.76		
CAPETOWN	20	0728	0756	0739	N12	W90	6802	28	1		0739	.50				
NIZMIR	20	0730	0738	0737	N10	W90			1-			.90		.50		
MANILA	20	0731	0736	0738	N14	W64			1-							
HTE-PROVEN	20	0816 E	0823		N13	W59			1-							
CAPETOWN	20	0817	0824	0819	N14	W59			1-		0819	.80	1.60			
BAKOU	20	0819 E	0825 D	0820	N14	W62	6803	6 D	1	2		1.82			60	
HTE-PROVEN	20	0910	0941	0918	N14	W60	6803	31	1		0918	1.20	2.40			
CAPRI-F	20	0914 E	0922 D	0914	N13	W59	6803	8 D	1	1	0914	.50	.90			
NIZMIR	20	0917 E	0943	0917	N16	W60	6803	26 D	1+			3.15		.70		
BAKOU	20	0925 E	1010 D	0932	N16	W66	6803	45 D	1+			2.28			80	
HTE-PROVEN	20	1310	1326		N12	W62			1-							
HTE-PROVEN	20	1520	1610		N12	W63			1-							
HTE-PROVEN	20	1633	1648		S09	W75			1-							
	20	2040	2045	NO FLARE	PATROL											
	20	2145	2150	NO FLARE	PATROL											
	20	2200	2225	NO FLARE	PATROL											
CLIMAX	20	2303 E	2315		N05	W19			1-		2305	.40	.40			
	21	0200	0240	NO FLARE	PATROL											
	21	0255	0410	NO FLARE	PATROL											
TACHKENT	21	0412	0425	0414	N04	W23			1-	1	0414	1.09	1.20		75	
MANILA	21	0419 E	0425		N05	W23	6805	6 D	1							
KIEVKO	21	1155 E	1215 D		N05	W27			1-	1	1206	.88			60	
CAPRI-F	21	1200 E	1202 D	1200	N07	W23			1-	1	1200	1.00	1.10			
	21	2200	2255	NO FLARE	PATROL											
	21	2300	2320	NO FLARE	PATROL											

SOLAR FLARES

MAY 1963

OBSERVATORY	DATE MAY 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX. LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND	MEASUREMENTS TIME — U T	MEAS AREA Sq Deg.	CORR. AREA Sq Deg	MAX WIDTH Ho	MAX INT *o	PROVISIONAL IONOSPHERIC EFFECT
	22	0210	0225	NO FLARE	PATROL											
MANILA	22	0857	0905	0900	N09	W38			1-							
	23	0145	0210	NO FLARE	PATROL											
ONDREJOV	23	0520 E	0530		N04	W65			1-	3	0525			2.30		
MANILA	23	0823	0855	0836	N05	W62	6814	32	1							
CAPETOWN	23	1022	1032	1025	N06	W67	6814	10	1		1025	.90	2.20			
CAPETOWN	23	1229	1302	1231	N06	W67	6814	33	1		1231	1.20	2.90			
CLIMAX	23	1230	1257	1232	N05	W65			1-			.60	1.00			
ONDREJOV	23	1230 E	1305	1240	N04	W69	6814	35 D	1+	3	1240			3.00		S-SWI
CAPRI-F	23	1239 E	1316 D	1247	N03	W67	6814	37 D	1	2	1242	1.50	1.01			
KIEVKO	23	1410 E			N05	W73			1-	1	1410	1.03			60	
CLIMAX	23	1454	1501	1457	N04	W70			1-			.40	.80			
ONDREJOV	23	1456 E	1507		N04	W70	6814	11 D	1+	3	1458			3.60		
CLIMAX	23	1511	1524 D	1520	N04	W70			1-			.40	.80			
ONDREJOV	23	1512	1531	1521	N04	W70	6814	19	1+	3	1521			5.00		
HTE-PROVEN	23	1520 E	1524		N05	W70	6814	4 D	1			.70				
HTE-PROVEN	23	1549	1553		N05	W70	6814	4	1			1.00				S-SWF
	24	0135	0140	NO FLARE	PATROL											
	24	0200	0210	NO FLARE	PATROL											
MANILA	24	0201 E	0214	0206	N07	W60	6805	13	1							
ONDREJOV	24	0528	0538	0531	N06	W65	6805	10	1	3	0531			2.30		
HTE-PROVEN	24	0529	0534		N08	W66			1-							
ABASTUMANI	24	0540	0556 D	0544	N12	E61	6812	16 D	1	2		1.80	4.20		62	
MANILA	24	0543	0555	0549	N09	E60			1-							
ONDREJOV	24	0543	0603	0546	N12	E56	6812	20	1	3	0546			2.30		
CAPETOWN	24	0642	0648	0644	N09	W68			1-		0644	.60	1.60			
ONDREJOV	24	0739	0747	0743	N04	W78			1-	3	0743			2.60		
MANILA	24	0740	0746	0743	N06	W72			1-							
ABASTUMANI	24	0740	0752 D	0742	N04	W85	6814	12 D	1+	2		1.35	6.90		78	
HTE-PROVEN	24	0741	0750		N05	W80			1-							
CAPETOWN	24	0741	0757	0743	N07	W80	6814	16	1		0743	.60				
UCCLE	24	0819 E	0834 D		N03	W88	6814	15 D	1			3.00	7.00			
CAPETOWN	24	0820	0858	0839	N05	W83	6814	38	1		0839	.90				
CAPETOWN	24	0927	0942	0930	N07	W83	6814	15	1		0930	.70				
HTE-PROVEN	24	0929	0934		N05	W80			1-							
CAPRI-F	24	1206 E	1232 D	1207	N12	E58			1-	3	1207	.30	.54			
CAPETOWN	24	1211	1222	1213	N05	W88			1-		1213	.20				
CAPETOWN	24	1247	1305	1256 U	N05	W88	6814	18	1		1256	.90				
UCCLE	24	1322 E	1445		N03	W88	6814	83 D	1			3.00	7.00			
UCCLE	24	1420 E	1432		N07	W70			1-							
UCCLE	24	1500	1511 D		N10	W72			1-							
UCCLE	24	1509	1519		N13	E54			1-							
UCCLE	24	1515	1533		N12	W70			1-							
HTE-PROVEN	24	1516	1524		N10	W68			1-							
CAPRI-F	24	1519 E	1540 D	1520	N11	W65	6805	21 D	1	3	1520	2.00	4.04			S1-S-SWF
UCCLE	24	1542	1602		N12	E54			1-							
MITAKA	25	0129 E	0135	0129	N08	W78	6805	6 D	1	1	0129	2.26		4.38	135	
CLIMAX	25	1622	1626	1623	N05	W84	6805	4	1			.90	2.40			

SOLAR FLARES

MAY 1963

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX PHASE	APPROX LAT.	APPROX MER DIST	McMATH PLAGE REGION				TIME — U T	MEAS AREA Sq. Deg	CORR AREA Sq Deg.	MAX. WIDTH Hα	MAX INT %	
	MAY 1963															
HTE-PROVEN	25	1704 E	1725		N07	W85			1-							
	26	0300	0315	NO FLARE	PATROL											
	26	0325	0500	NO FLARE	PATROL											
MANILA	26	0351 E	0403	0355	N13	W90			1-							
MANILA	26	0540	0635	0605	N10	W90	6805	55	1							
HTE-PROVEN	27	0529	0730	0548	N13	E15	6812	121	1		0548	4.40	4.80			
MANILA	27	0553 E	0623		N09	E18	6812	30 D	2			8.25				
TACHKENT	27	0553 E	0655		N14	E16	6812	62 D	1+	2	0617	8.21	8.90	1.80		
CRIMEE	27	0557 E	0715 D		N13	E19	6812	78 D	1+	1	0557	6.30				
CAPRI-F	27	0601 E	0730 D	0635	N12	E18	6812	89 D	2	2	0635	5.00	5.30			
KODAIKNL	27	0615 E	0617 D		N11	E18			1-	2						
CAPRI-F	27	0635 E	0730 D	0635	N13	E49	6815	55 D	1	2	0635	1.50	2.25			
HTE-PROVEN	27	0826	0910		N13	E54			1-							
CAPETOWN	27	0929	0951	0936	N15	E48			1-		0936	1.00	1.60			
CAPETOWN	27	1026	1038	1030	N14	E48			1-		1030	1.10	1.70			
HTE-PROVEN	27	1345	1348		N13	E46			1-							
HTE-PROVEN	27	1401	1415		N12	E49			1-							
CAPRI-F	27	1403 E	1537 D	1403	N13	E43	6815	94 D	1	1	1403	3.00	4.20			
CLIMAX	27	1505	1535	1514	N12	E49			1-			.40	.50			
ONDREJOV	27	1517 E	1533	1519	N13	E46	6815	16 D	1	3	1519			2.90		
SCHAUINS	27	1545 E	1609 D		N11	E44	6815	24 D	1+	2			4.00			
	27	2140	2145	NO FLARE	PATROL											
	28	2305	2315	NO FLARE	PATROL											
	29	0010	0015	NO FLARE	PATROL											
	29	0045	0050	NO FLARE	PATROL											
	29	0200	0300	NO FLARE	PATROL											
ONDREJOV	29	1220 E	1227	1221	N13	E21			1-	3	1221			1.80		
CLIMAX	29	1524 E	1527 D		N12	E17			1-		1521	.60	.60			
	29	2105	2130	NO FLARE	PATROL											
	29	2145	2150	NO FLARE	PATROL											
CLIMAX	29	2247	2315	2254	N12	E12			1-			1.00	1.00			
VOROSHILOV	29	2252	2258		N12	W12			1-	1	2254	.36			53	
	30	0125	0300	NO FLARE	PATROL											
ONDREJOV	30	0436 E	0500	0440	N12	E10	6815	24 D	1+	3	0440			3.00		
MANILA	30	0437	0505	0441	N10	E11	6815	28	1							
TACHKENT	30	0438	0504	0442	N13	E10	6815	26	1	3	0439	1.55	1.60	2.80	85	
CAPETOWN	30	0746	0814	0750	N14	E08			1-		0750	1.90	2.00			
UCCLE	30	0801 E	0817		N12	E08			1-							
SCHAUINS	30	0805 E	0810 D		N12	E11			1-	2			1.00			
CAPETOWN	30	0934	0955	0939	N14	E06			1-		0939	1.00	1.00			
UCCLE	30	0936	0955		N13	E08			1-							
UCCLE	30	1057	1128		N10	E05			1-							
UCCLE	30	1305	1312		N14	E05			1-							
ONDREJOV	30	1410 E	1432	1416	N13	E08			1-	3	1416			2.30		
UCCLE	30	1411	1435		N15	E08			1-							
CAPRI-F	30	1412 E	1417 D	1412	N13	E07			1-	2	1413	1.50	1.50			

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

MAY 1963

OBSERVATORY	DATE MAY 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq. Deg	CORR. AREA Sq. Deg.	MAX. WIDTH Ho	MAX. INT %	PROVISIONAL IONOSPHERIC EFFECT
UCCLE	30	1636	1721		N15	E02			1-							
CLIMAX	30	1820 E	1828		N13	E01			1-		1824	.50	.50			
	31	0000	0220	NO FLARE PATROL												
MANILA	31	0340	0355	0351	N12	W02			1-							
MANILA	31	0608	0615	0611	N12	W03			1-							
MANILA	31	0721	0755	0730	N12	W08	6815	34	1							
MANILA	31	0721	0755	0741	N12	W08			1							
ONDREJOV	31	0728 E	0806	0729	N15	W01	6815	38 D	1+	3	0729			2.60		
SCHAUINS	31	0730 E	0740		N15	W01	6815	10 D	1+	2			4.00			
	31	2325	2340	NO FLARE PATROL												
	31	2345	2355	NO FLARE PATROL												

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the May 1963 flares published in CRPL-F 226 B for June 1963

ATHENES	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST den BERCH, NETHERLANDS
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN		
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	KIEV KO	KIEV GAO, USSR	NIZMIR	KRASNAYA PAHRA, USSR
		KIEV KY	KIEV UNIVERSITY, USSR	SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (CERMAN)	LOCKHEED	LOS ANCELES, CALIF., USA	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	MCMATH	MCMATH-HULBERT	SCHAUINS	SCHAUINSLAND, CFR
CRIMÉE	SIMEIZ, USSR		PONTIAC, MICH., USA	TACHKENT	TASHKENT, USSR
HERSTMONCEU	ROYAL CREENWICH OBSERVATORY, HERSTMONCEUX, ENGLAND	MOSCOU	MOSCOW-GAISH, USSR	WENDEL	WENDELSTEIN, GFR
HTE-PROVEN	HAUTE-PROVENCE	NEW SCHAUIN FREIBURC, CFR			

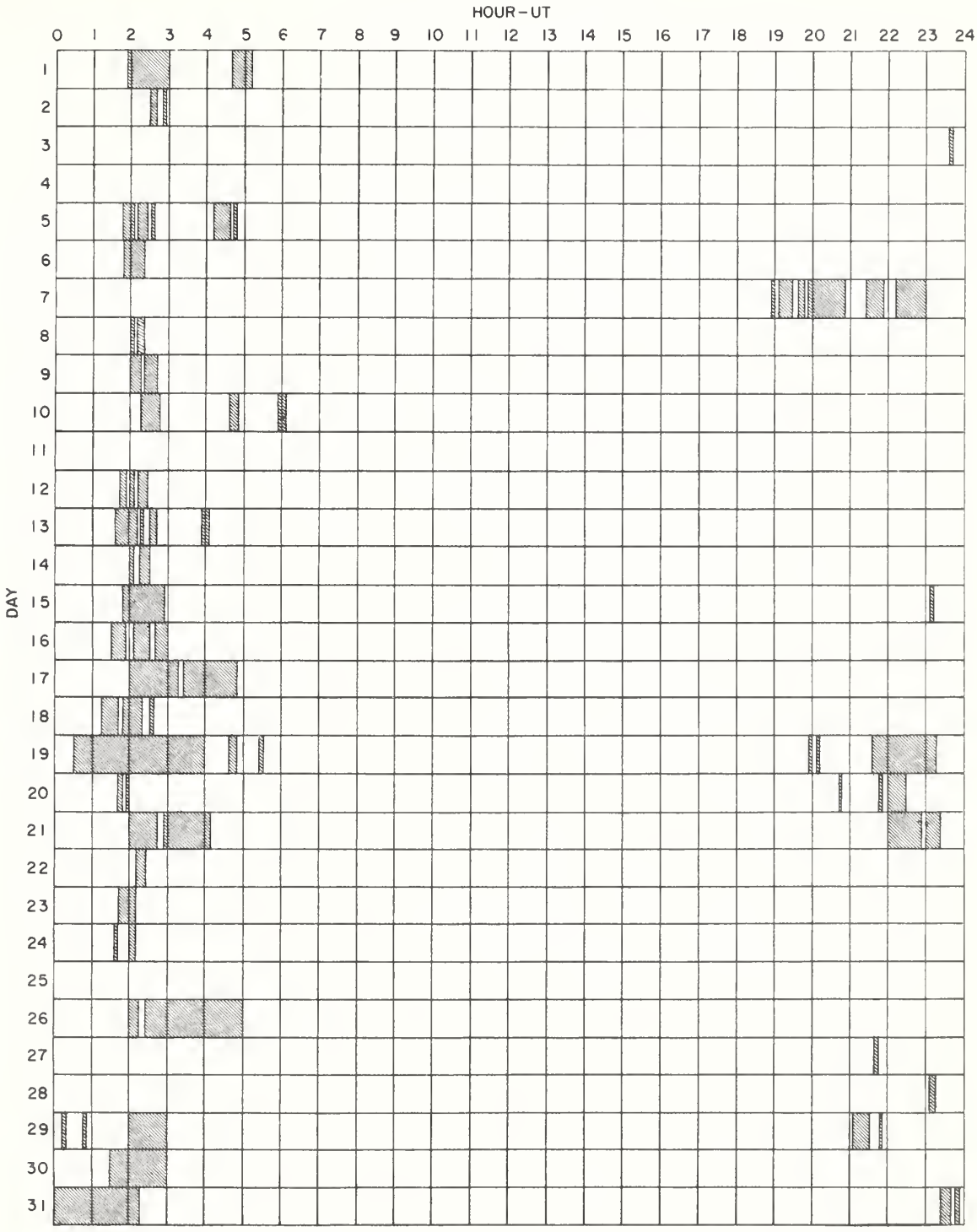
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

E = LESS THAN D = CREATER THAN U = APPROXIMATE □ = NOT REPORTED.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

MAY 1963



Observatories Include:

Abastumani	Capetown	Haute-Provence	Istanbul	McMath-Hulbert	Ottawa
Arcetri	Capri-F (German)	Herstmonceux	Kharkov	Mitaka	Sacramento Peak
Athenes	Capri-S (Swedish)	Honolulu	Kiev KO	Nizamiah	Schauinsland
Bakou	Climax	Huancayo	Kodaikanal	Nizmir	Tachkent
Bucharest	Crimee	Ikomasan	Lockheed	Ondrejov	Uccle
					Voroshilov

IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS
SUDDEN COSMIC NOISE ABSORPTION
SUDDEN ENHANCEMENTS OF ATMOSPHERICS
SUDDEN PHASE ANOMALIES
SOLAR NOISE BURSTS AT 18 Mc

JULY 1963

JULY 1963	UNIVERSAL TIME			SWF		IMPORTANCE					WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX	TYPE	IMP	ABS	SCNA	SEA	SPA	BUR			
04	0735	0800		S	2						5	TO MA NE	0734

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION

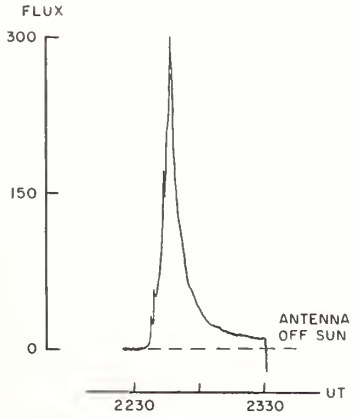
OUTSTANDING OCCURRENCES

AUGUST 1963

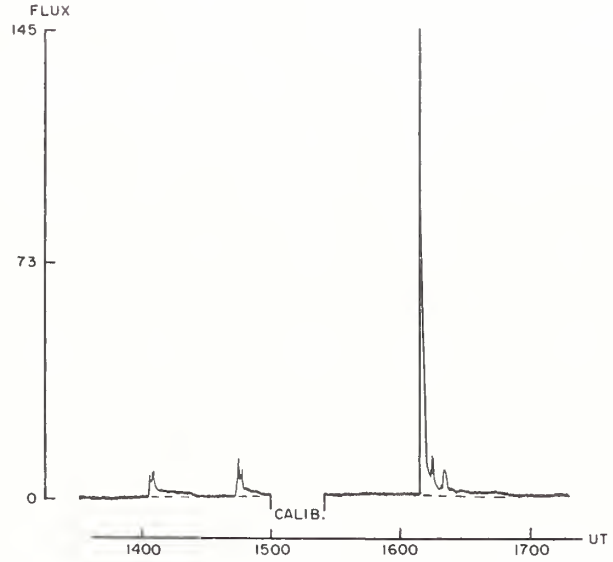
ARO - OTTAWA 2800 Mc.

AUGUST 1963	TYPE	START UT	DURATION HRS	DURATION MIN	MAXIMUM TIME UT	MAXIMUM PEAK FLUX	MAXIMUM MEAN FLUX	REMARKS
2	3 Simple 3	1355	1	15	1410	2	1	
2	3 Simple 3	1730	1	28	1752	2	1	
2	1 Simple 1	2321		2	2322.5	3	1.5	
6	3 Simple 3	1340	1	48	1405	5	2	
7	1 Simple 1	1147.3		1.7	1148.2	2	1	
7	1 Simple 1	1624		6	1625.5	1	0.5	
9	2 Simple 2 f	2234		30	2246.3	300	95	
	4 Post Increase			>26		25	--	
10	1 Simple 1	1354.5		3	1355.8	5	2	
11	1 Simple 1	1127		5.5	1128.5	2	1	
11	1 Simple 1 f	1944		4.5	1946.3	3.4	1.7	
11	1 Simple 1	1957.5		1.5	1958	2	1	
13	6 Complex	2048.8		1.7	2049.3	2	1	
17	6 Complex f	1403.8		3.5	1405.8	8	4.5	
	4 Post Increase			17		2	1	
17	6 Complex f	1444.5		2.8	1445.8	12	6	
	4 Post Increase			8		2	1	
17	2 Simple 2 f	1609		8	1610.5	145	27	
	4 Post Increase A			30		2	1	
	1 Simple 1	1620		3	1621	6	3	
17	6 Complex	2256.5		7.5	2301.2	11	5	
	4 Post Increase			>26		4	--	
18	3 Simple 3 A	1714	1	46	Indet.	2.3	1.7	
	1 Simple 1	1714		3	1715.3	2	1	
	2 Simple 2	1757.5		5	1759	116	26	
	4 Post Increase			19		4	2	
18	1 Simple 1	2136		3	2137.3	4.4	2.5	
	4 Post Increase			33		2	1.5	
20	3 Simple 3	1355	>1	05	1405	2	--	
21	2 Simple 2 f	1419.5		3.5	1420.5	9	4.5	
21	1 Simple 1 f	2035		6	2036	2	1.2	
22	3 Simple 3	1650	2	00	1757	2	1	
23	3 Simple 3	1255	3	05	1338	3	1.5	
23	3 Simple 3	2200	1	00	2210	3	1.5	
24	3 Simple 3 f	1644		16	1647	3	1.5	
26	3 Simple 3 f	b1107		>20	1109.3	4	--	

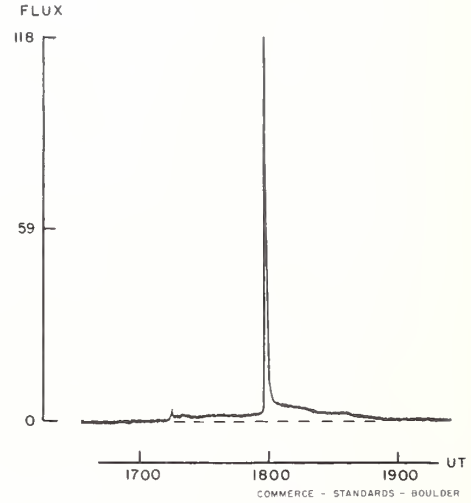
SELECTED 2800 MC/S SOLAR NOISE BURSTS
OTTAWA, CANADA



AUGUST 9, 1963



AUGUST 17, 1963



AUGUST 18, 1963

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

MAY — JUNE — JULY 1963

BOEING - SEATTLE 223 Mc.

1963 May June July	Type	Starting time UT	Time of max. UT	Duration minutes	Flux density 10^{-22} wm^{-2}(c/s)$^{-1}$ peak	mean
June 7	c	2344.7	2347.8	6.3	112	25

COMMERCE - STANDARDS - BOULDER

Note:

Due to repair of equipment during May, June and July 1963, periods of observation were as follows:

May 1-4; 7 and 8
June 4-15; 18-21; 25-30
July 1-13; 14-15; 19-26

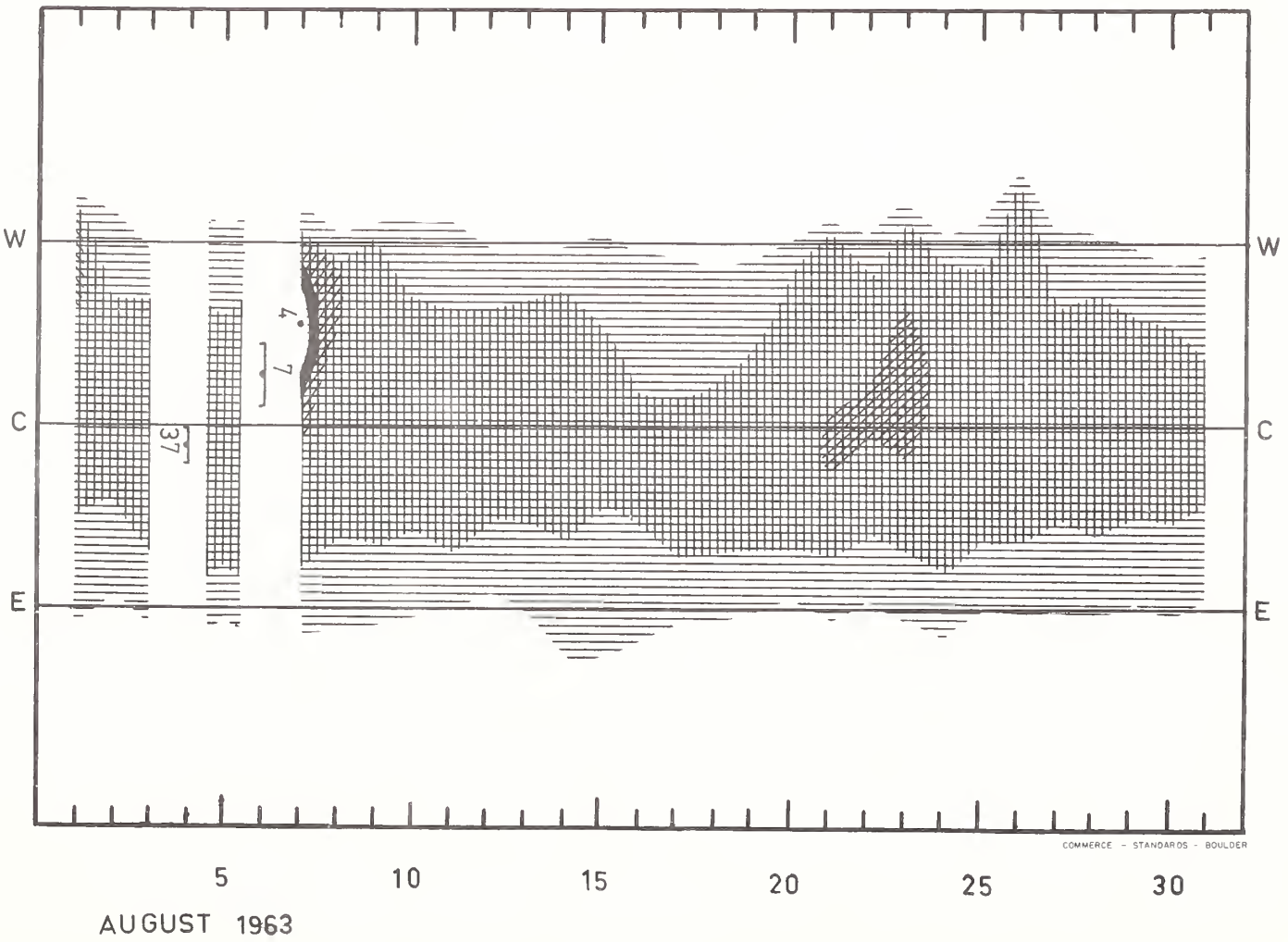
Normal observing hours were from 1600 to 0100 U.T.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

AUGUST 1963

NANÇAY

169 Mc.



SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
AUGUST 1963

NBS BOULDER 108 Mc.

Aug. 1963	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
4	6	1206E	-	174 D	1
6	6	1208E	1605	268 D	1
7	6	1209E	-	-	1
9	6	1415	1840	691 D	2
12	8	1334.1	1335.0	1.0	3
12	4	1432.2	1435.1	4.8	2
12	8	1532.1	1533.1	1.8	3

COMMERCE - STANDARDS - BOULDER

NOMINAL TIMES OF OBSERVATION
AUGUST 1963

NBS BOULDER 108 Mc.

AUGUST 1963	HOURS OF OBSERVATION	UT	AUGUST 1963	HOURS OF OBSERVATION	UT
1	1203-0155	1948-2200; (1)(2)	16	1217-0138	1915-0138 (1)
		0102-0155 (1)(2)	17	1218-0137	1610-1645;(2)
2	1204-0154	2020-2026 (2)			1930-0137 (1)
3	1205-0153	≈ 2015-0153 (1)(2)	18	1219-0136	2150-2230;(1)
4	1206-0152	≈ 2055-0152 (1)			2305-0135 (1)(2)
5	1207-0151	2145-0151 (1)	19	1220-0135	
			20	1221-0133	
6	1208-0150	2021-0151 (1)(2)			
7	1209-0148	≈ 2200-0148 (1)(2)	21	1222-0132	1640-1845;(1)
8	1210-0147	1210E-1500;(1)(2)			2035-0132 (1)(2)
		2030-0147 (1)(2)	22	1223-0130	1930-0130 (1)
9	1210-0146	≈ 2200-0146 (1)(2)	23	1224-0129	
10	1211-0145	2020-2205; (2)	24	1225-0127	
		2331-0145 (1)(2)	25	1226-2227;	2235-0126 (1)
				2235-0126	
11	1212-0143	1600-0142 (2)			
12	1213-0142	1213E-0142 (1)(2)	26	1227-0124	2150-0124 (1)
13	1214-0142	1214E-0142 (1)(2)	27	1228-0123	
14	1215-0140	1215E-2031 (1)(2)	28	1229-0121	1730-2130 (1)
15	1216-0139	1815-≈ 2400(1)(2)	29	1229-0120	
			30	1230-0118	1835-2130;(1)
					2220-0118 (1)
			31	1231-0117	

COMMERCE - STANDARDS - BOULDER

(1) Atmospherics
(2) F.M. Interference

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1963

HAO BOULDER 7.6 - 41 Mc.

Date 1963	Bursts			Frequency Range (mc)
	Type	Time (U.T.)	Intensity	
1 Aug	No Observ.	1538-1847		
2	No Observ.	1608-1819		
	III	2007.15-2008	1-	16-36
	No Observ.	2043-2257		
	III	2321-2323	1+	16-41
	III	2527.15-2527.45	1	23-41
4	III	1957.15-1957.30	1-	29-41
	III	2052-2052.15	1-	22-41
5	III	1902-1902.15	1-	22-41
	III	1903.30-1904	1	7-41
	III	1931.45-1932.15	1-	16-41
	III	1933-1933.30	1-	21-39
	III	1934-1934.15	1-	24-39
	III	2125-2125.30	1	20-41
	III	2127.30-2127.45	1-	21-36
	III	2141-2141.15	1-	22-41
	III	2143.15-2143.45	1-	16-41
	III	2147-2147.15	1-	16-41
	III	2150.45-2151	1-	22-41
	III	2152.45-2153	1-	20-41
	III	2304.45-2305	1-	21-41
6	continuum	1536-1635	1	19-41
	III	1659.30-1700	1-	18-41
	III	1737.15-1737.30	1-	22-34
	III	1744.45-1746	1-	17-41
	III	1753.30-1757.45	1	7-41
	continuum	1809-a1822	1-	20-34
	III	2055-2055.30	1-	21-41
	III	2118.45-2119	1-	19-36
	III	2140-2140.30	1-	21-41
	III	2141.15-2141.30	1-	21-36
	III	2158.45-2159	1-	20-34
	III	2201.30-2202	1	20-41
	III	2223.15-2224.30	1	16-41
	III	2245.30-2245.45	1-	19-34
	III	2248.15-2248.30	1-	21-34
	III	2256-2256.45	1-	21-36
	III	2513-2513.15	1-	21-33
	III	2513.45-2514	1-	23-38
7	III	2023.15-2023.30	1	16-41
	III	2034.15-2034.30	1-	21-35
	III	2046.45-2047	1-	25-38
	III	2121.15-2121.30	1-	27-41
	III	2223.45-2224.15	1-	22-41
	III	2433.30-2433.45	1-	31-41
8	III	1736.30-1737.30	2	7-41
	III	1829.15-1829.45	1	29-41
	III	1841.15-1842.15	1-	23-41
	III	1934.30-1934.45	1-	21-28
	No Observ.	1958-2500		
9	No Observ.	1549-1844		

Date 1963 cont.	Bursts			Frequency Range (mc)
	Type	Time (U.T.)	Intensity	
9	continuum	b1844-2240	1	20-41
	IV	2237-2335	2	14-41
	III	2237.45-2238.30	2	9-41
	continuum	2335-2443	1	20-41
10	III	1355.15-1357	1+	19-41
	continuum	151[illegible]-1646	1-	21-41
	III	1629-1632.15	2	19-41
	III	1719.30-1720	1	22-41
	III	1904.45-1905	1-	20-41
	III	2045.45-2046.15	1	20-41
	III	2048.15-2048.45	1	20-41
	III	2329.45-2330.45	1	21-41
	III	2332.15-2332.30	1	21-41
	III	2430.15-2431.15	1	21-41
11	III	1536-1537	1+	19-41
	continuum	1854-1905	1-	22-41
	III	1905-1906.15	2	18-41
	II	1905.30-1914	2	20-41
	IV	1905.30-2032.45	2	18-41
	III	1957.30-2002	2+	7-41
	III	2032.45-2033.45	1	20-41
	III	2104.15-2104.45	1-	24-41
	III	2109.45-2110	1-	21-40
	No Observ.	2119-2257.30		
	continuum	2357.15-2417	1+	20-41
	III	2501.15-2503.15	2	18-41
12	III	1618.15-1618.30	1-	21-41
	III	1633.30-1633.45	1-	27-39
	III	1634.15-1634.30	1-	30-41
	III	1639.15-1639.30	1-	27-41
	III	1649.30-1649.45	1-	31-41
	III	1707.45-1711	1	21-41
	III	1848-1849.45	1	20-37
	III	1944-1945.15	1-	21-38
	continuum	2000-2057	1-	21-41
	II	2057-2102.45	2	24-41
	IV	2102.45-2300	2	19-41
15	III	1655.45-1656.15	1-	21-41
	III	1731.30-1732.30	1-	21-41
	III	1801.45-1802.45	1-	19-41
17	III	1609.45-1613.30	2+	7-41
	III	1613.30-1616.30	1+	19-41
	II	1613.30-1618	2	29-41
18	III	1711.45-1712.15	1	20-41
	III	1713.45-1714.30	1-	21-41
	III	1714.45-1715.15	1+	20-41
	III	1718.30-1718.45	1-	20-36
	III	2206.15-2206.30	1-	26-41
	III	2324.30-2324.45	1-	22-37
	III	2446.30-2448	1	22-41
19	III	1612.30-1612.45	1	21-41

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1963

HAO BOULDER

7.6 - 41 Mc.

Date 1963	Bursts Type	Time (U.T.)	Intensity	Frequency Range (mc)
cont.				
19 Aug	III	1613.15-1613.30	1-	22-41
	III	1614.30-1614.45	1-	27-40
	III	1625-1625.15	1-	21-41
	III	1728-1728.15	1-	26-36
	III	1736.30-1736.45	1-	27-36
	III	1903.15-1903.30	1-	21-41
	III	1933.15-1933.30	1-	21-41
	III	1935.45-1936	1-	28-36
	III	1940.45-1941	1-	27-41
	III	2012.15-2012.30	1-	22-41
	III	2015.45-2016	1-	21-41
	III	2029.30-2029.45	1-	24-41
	III	2054.45-2055.45	1-	22-39
	III	2104-2104.15	1-	30-41
	III	2146.30-2146.45	1-	28-41
	III	2200-2200.15	1-	20-41
	III	2322.45-2323	1-	21-35
	III	2422.45-2423	1-	20-37
	III	2457.45-2458.15	1-	22-47
	III	2511.45-2512	1-	21-41
	III	2514-2514.15	1-	21-41
20	III	1615.45-1616	1-	19-41
	III	1645.45-1646	1	18-41
	III	1654.15-1654.30	1-	19-41
	III	2121.45-2122.15	1-	19-41
21	III	1419-1421.30	2	19-41
	III	1421.30-1422.45	2	19-41
	III	1423.30-1424	1	19-41
	III	1424.30-1425	1	20-41
	III	1426-1426.45	1+	19-41
	III	1428-1428.15	1-	21-41
	III	1431.30-1431.45	1-	21-36
	III	1524-1524.15	1-	23-35
	III	1525.15-1525.30	1	18-37
	III	1529-1529.30	1-	20-29
	III	1542.30-1543	1	19-41
	III	1544.15-1545.15	1	19-33
	III	1741.45-1742.30	1	21-41
	III	1834.45-1835	1-	21-28
	continuum	1954-2220	1	20-41

Date 1963	Bursts Type	Time (U.T.)	Intensity	Frequency Range (mc)
cont.				
21 Aug	III	2035.30-2037	2	7-41
	III	2038-2039.15	2	7-41
	III	2039.30-2040.15	2	14-41
	III	2227-2227.15	1-	21-37
	III	2318.30-2318.45	1-	20-36
	III	2327-2327.30	1	20-41
	III	2339.15-2339.30	1-	24-41
22	No Observ.	1400-2500		
23	No Observ.	1400-2219		
24	III	1354-1354.15	1-	19-38
	III	1414.30-1414.45	1-	32-38
	III	1416.30-1416.45	1-	23-40
	III	1418-1418.15	1-	27-40
	III	1420.15-1420.45	1-	29-39
	III	1438.45-1439.15	1-	21-41
	III	1443.15-1443.45	1-	24-41
	III	1508.45-1509	1-	23-41
	III	1524.45-1525	1-	20-41
	III	1532.30-1532.45	1-	24-41
	III	1541.15-1541.30	1-	21-41
	III	1605.30-1605.45	1-	26-41
	III	1614-1614.15	1-	20-41
	III	1618-1618.15	1-	24-41
	III	1711-1711.15	1-	24-41
	III	1719.45-1720	1-	21-38
	III	1833.15-1834	1-	19-41
25	III	1619.30-1620	1	20-41
	III	1655.15-1655.30	1-	20-30
	III	1714-1714.45	1	21-41
26	III	1618-1618.15	1	21-41
	III	1704-1705.15	1	21-41
	III	1706-1707.30	1	21-41
	III	1907-1908.30	1-	23-35
	III	2039-2039.15	1	21-36
	III	2116-2117.15	1-	20-41
27	III	2222.30-2223	1-	21-41
28	III	1928.15-1928.45	1-	21-41
	III	1952.15-1952.30	1-	22-39
	III	1953.30-1953.45	1-	25-41
	III	2017-2017.30	1-	20-41

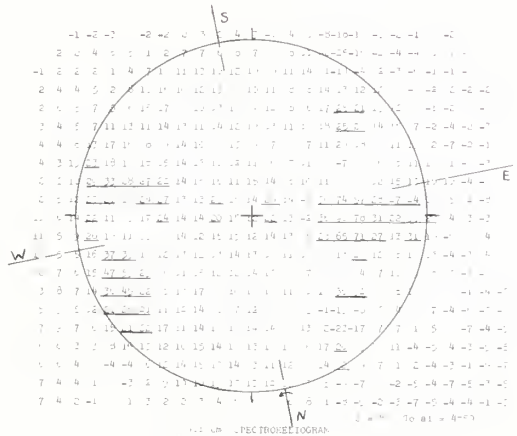
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

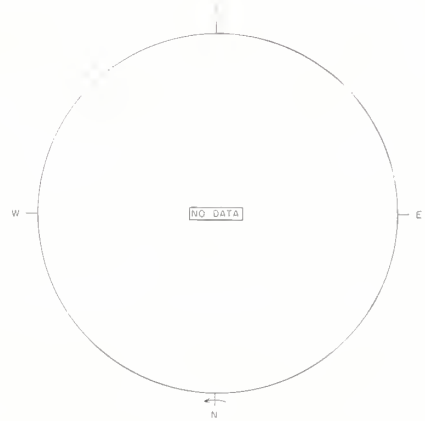
AUGUST 1963

STANFORD

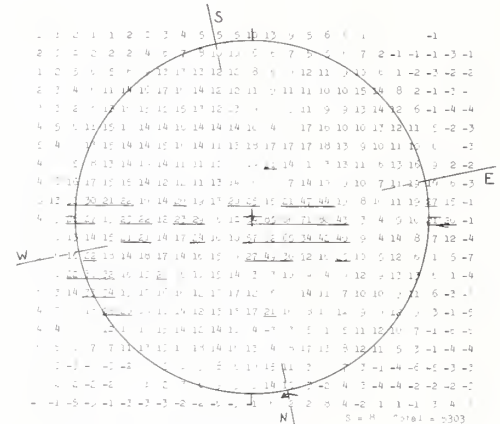
9.1 cm



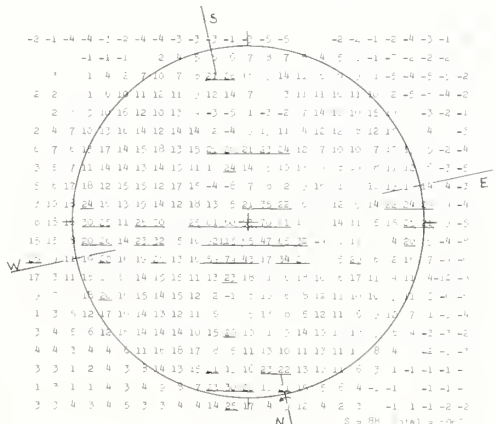
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug [illegible] 20-21 hrs UT; Brightness Unit = 2.4 x 10[illegible] °K.



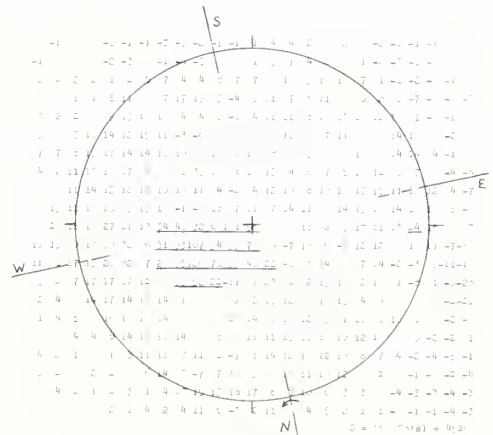
1963 AUGUST [illegible]



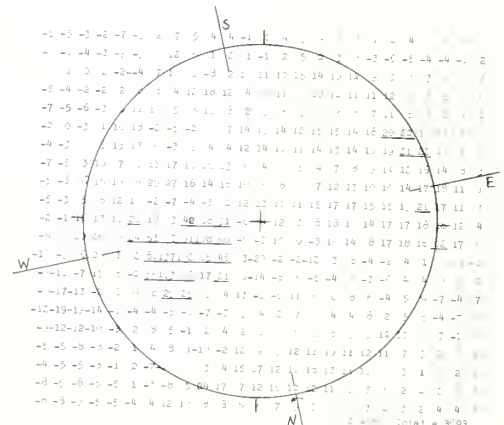
9.1 cm SPECTROHELIOGRAM
Stanford, [illegible] Aug [illegible] 20-21 hrs UT; Brightness Unit = 2.2 x 10[illegible] °K.



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug 04, 20-21 hrs UT; Brightness Unit = 2.3 x 10[illegible] °K.



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug [illegible], 20-21 hrs UT; Brightness Unit = 2.5 x 10[illegible] °K.



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug [illegible], 20-21 hrs UT; Brightness Unit = 3.1 x 10[illegible] °K.

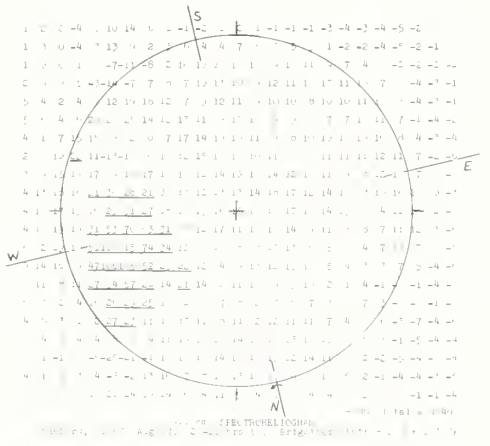
COMMERCE - STANDARDS

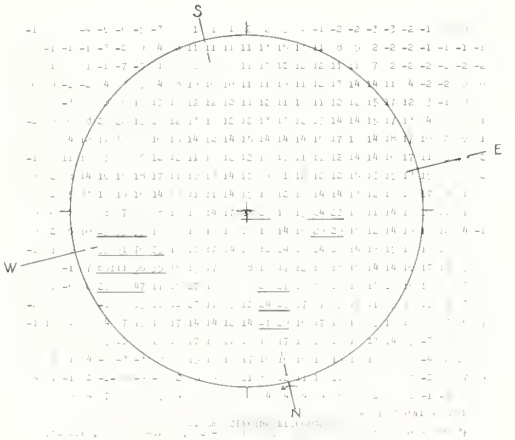
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

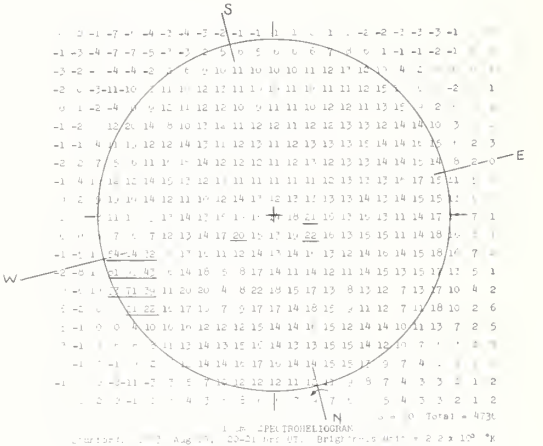
AUGUST 1963

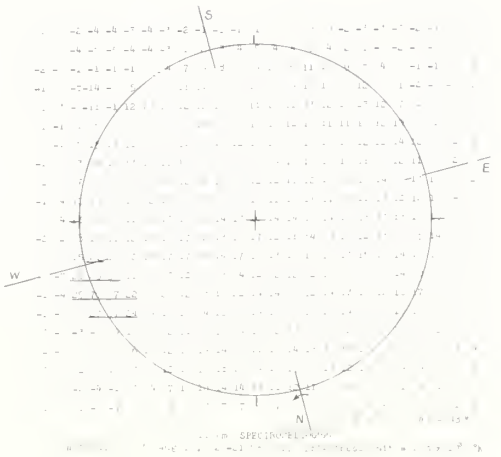
STANFORD

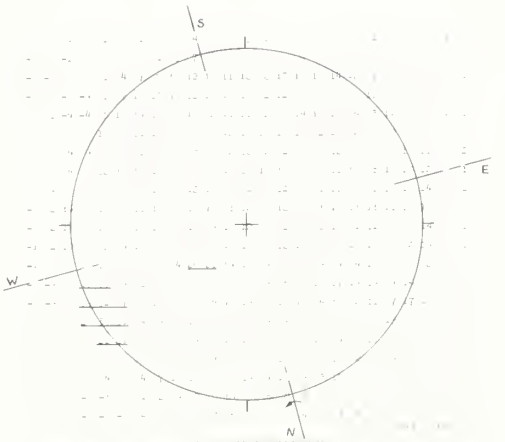
9.1 cm

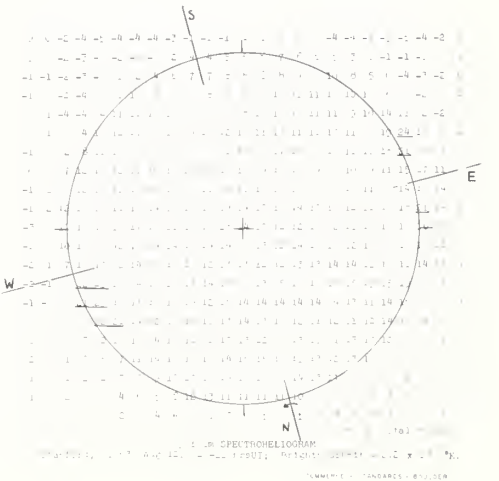












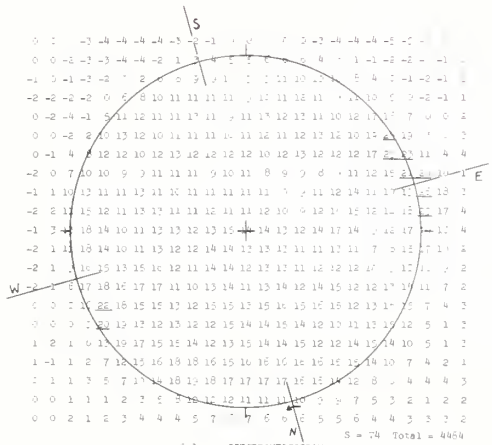
IV1

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

AUGUST 1963

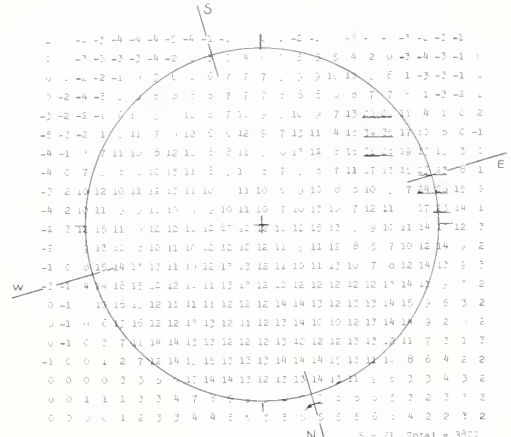
STANFORD

9.1 cm



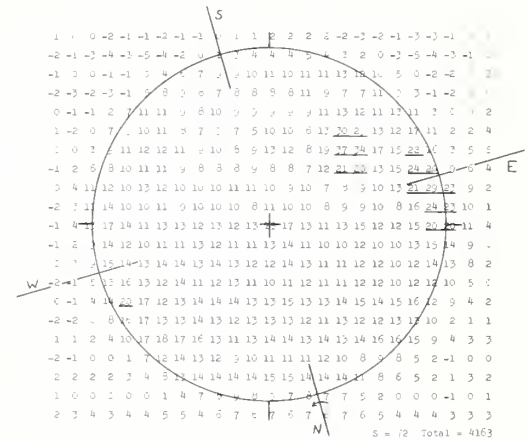
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug 13, 20-21 hrs UT; Brightness Unit = 2.1 x 10^4 °K.

S = 74 Total = 4464



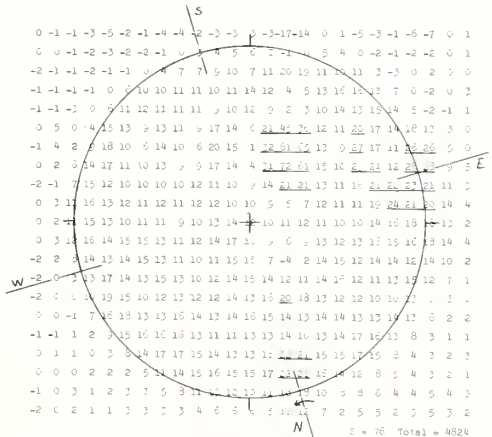
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug 14, 20-21 hrs UT; Brightness Unit = 2.4 x 10^4 °K.

S = 71 Total = 3877



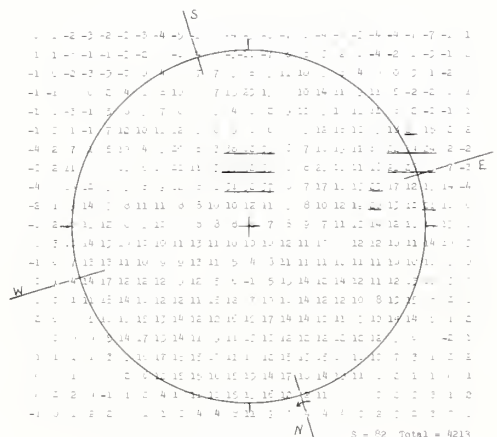
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug 15, 20-21 hrs UT; Brightness Unit = 2.2 x 10^4 °K.

S = 72 Total = 4163



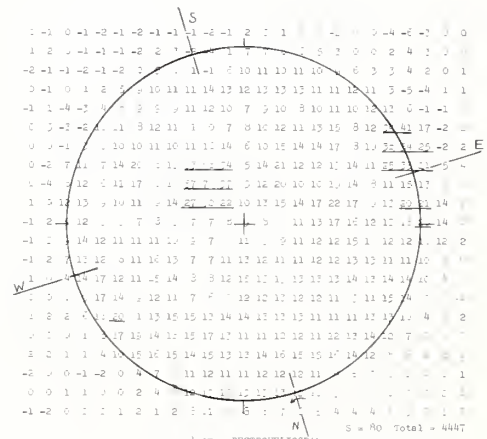
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug 16, 20-21 hrs UT; Brightness Unit = 2.0 x 10^4 °K.

S = 76 Total = 4824



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug 17, 20-21 hrs UT; Brightness Unit = 2.5 x 10^4 °K.

S = 82 Total = 4213



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Aug 18, 20-21 hrs UT; Brightness Unit = 2.3 x 10^4 °K.

S = 80 Total = 4447

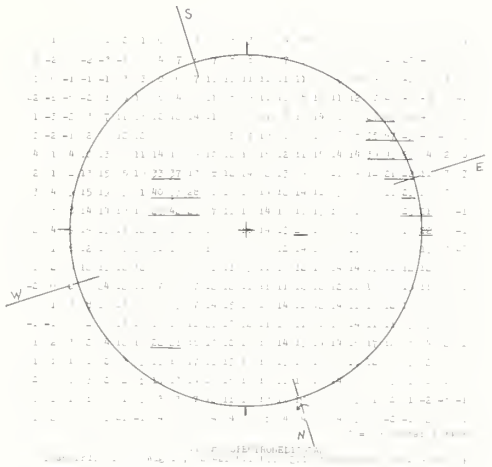
COMMERCE - STANDARDS - BOULDER

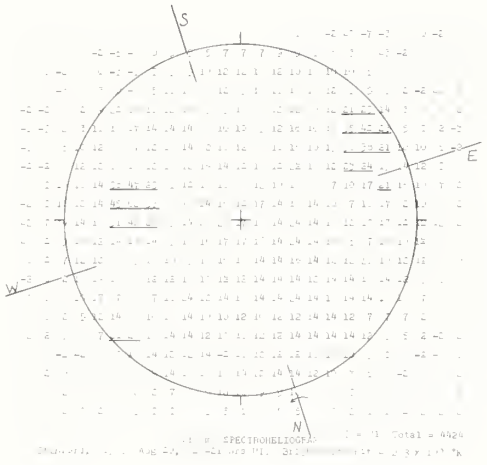
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

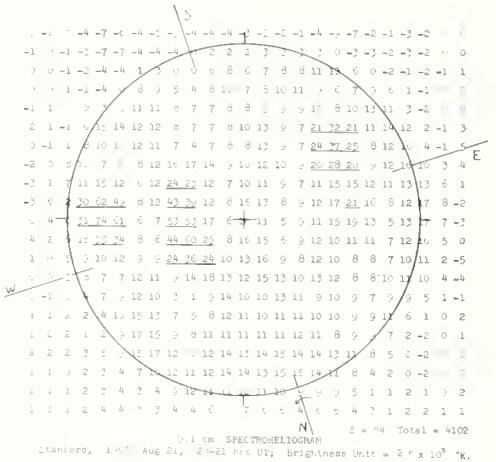
AUGUST 1963

STANFORD

9.1 cm

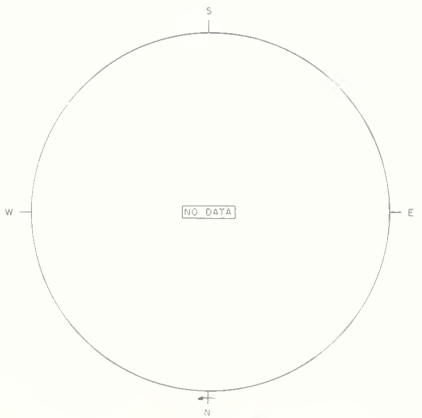




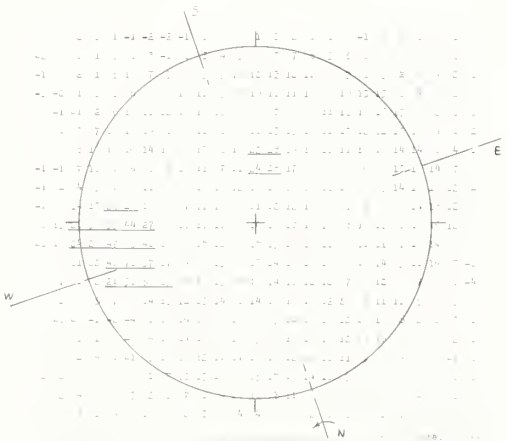


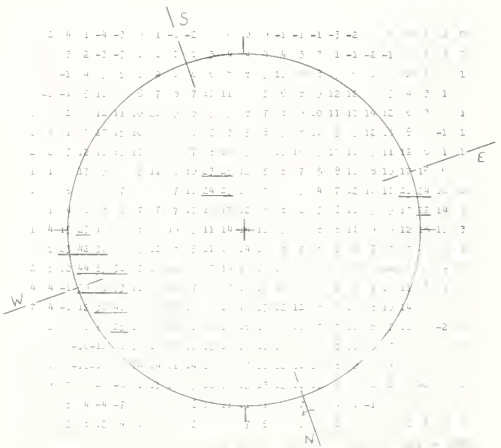
9.1 cm SPECTROHELIOGRAM

Stanford, 1963 Aug 21, 21^h41^m UT; Brightness Unit = 2 x 10^3 °K.



1963 AUGUST





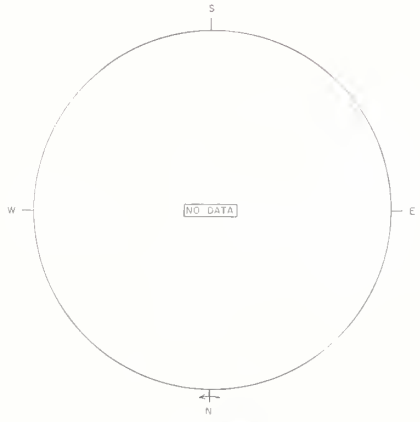
IVk

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

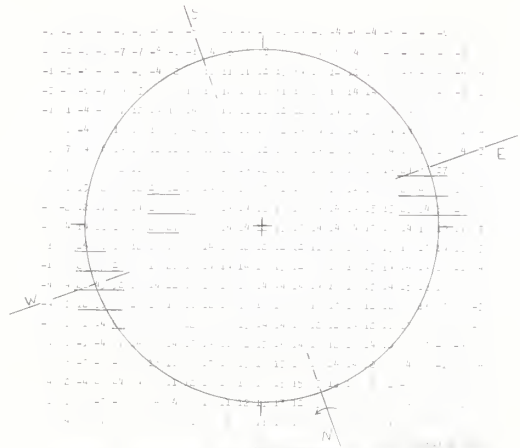
AUGUST 1963

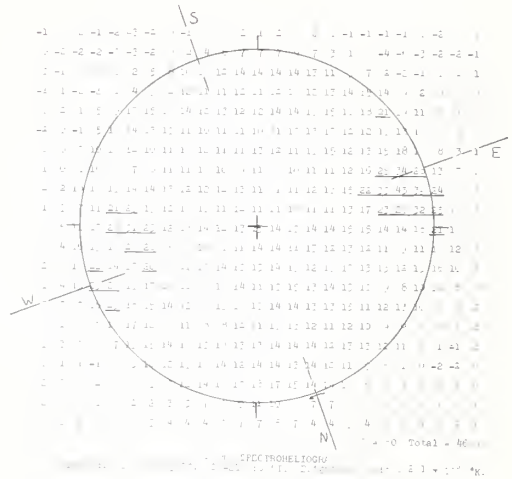
STANFORD

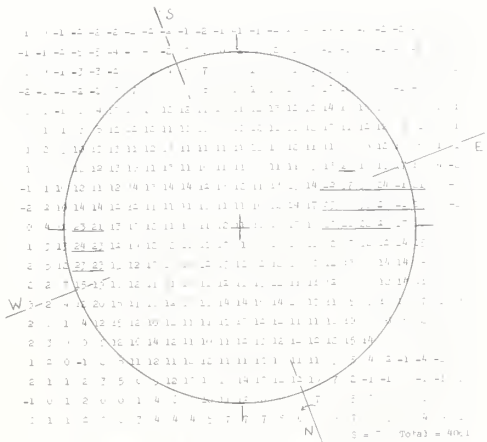
9.1 cm

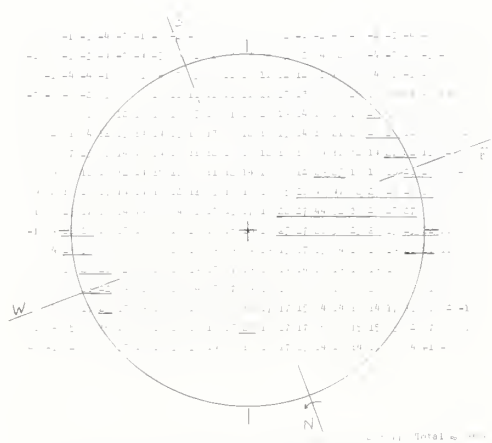


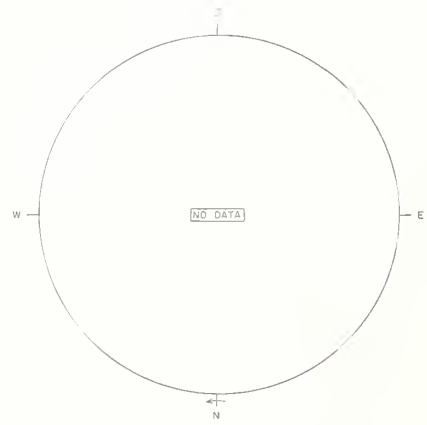
1963 AUGUST











1963 AUGUST 30

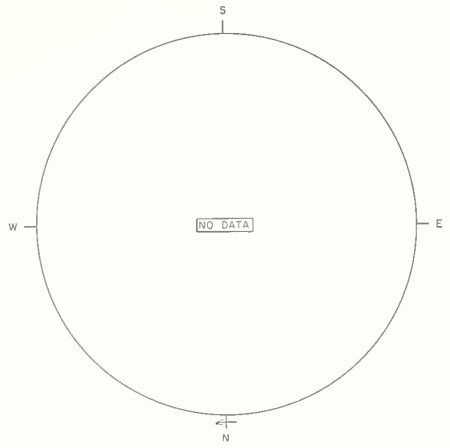
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

AUGUST 1963

STANFORD

9.1 cm



COSMIC RAY INDICES

(Climax Neutron Monitor)

IGC Station B 305

JULY 1963

July 1963	Daily average counts/hr*	July 1963	Daily average counts/hr*
1	3196.4 **39	16	3202.1
2	3178.5	17	3195.9
3	3186.1	18	3196.2
4	3178.9	19	3196.2
5	3174.9	20	3192.0
6	3155.7	21	3181.5
7	3165.1	22	3170.6
8	3174.8	23	3170.4
9	3192.3	24	3172.2
10	3191.2	25	3167.7
11	3201.1	26	3173.7
12	3202.9	27	3182.3
13	3208.8	28	3180.9
14	3213.3	29	3140.0
15	3219.6 **38	30	3154.6
		31	3141.0

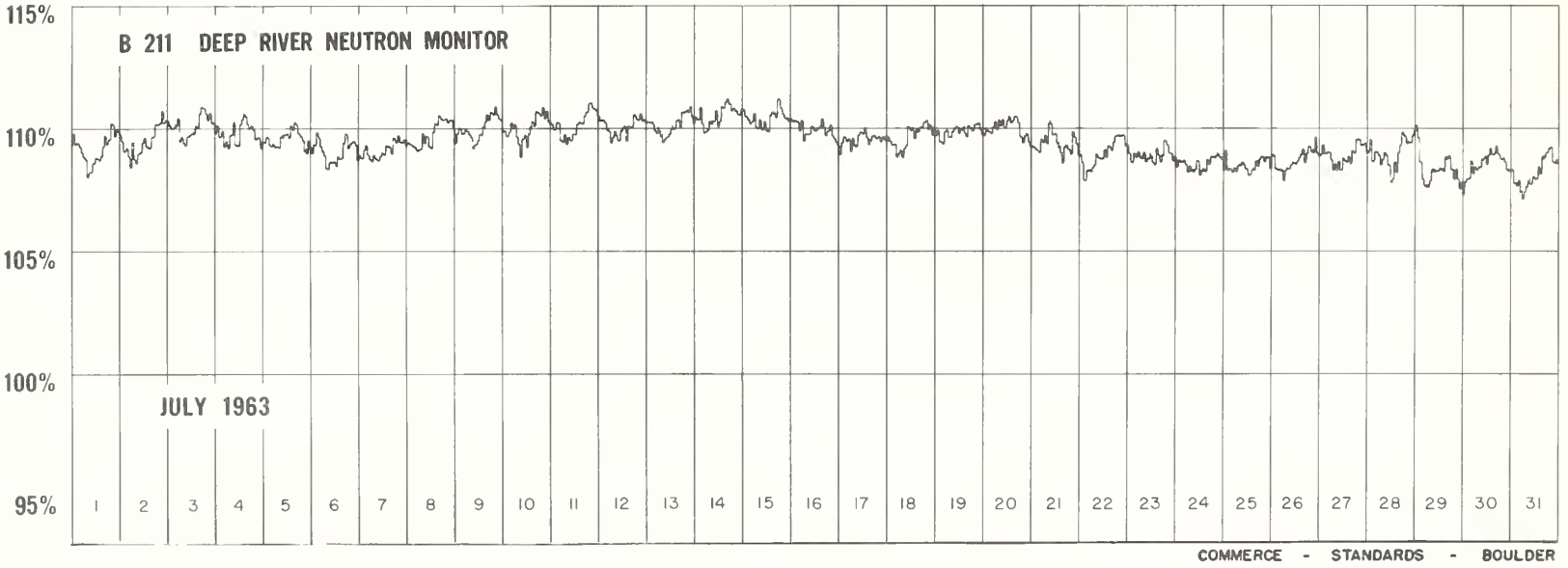
COMMERCE - STANDARDS - BOULDER

* Scaling Factor 128

** Number of Section Hours

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

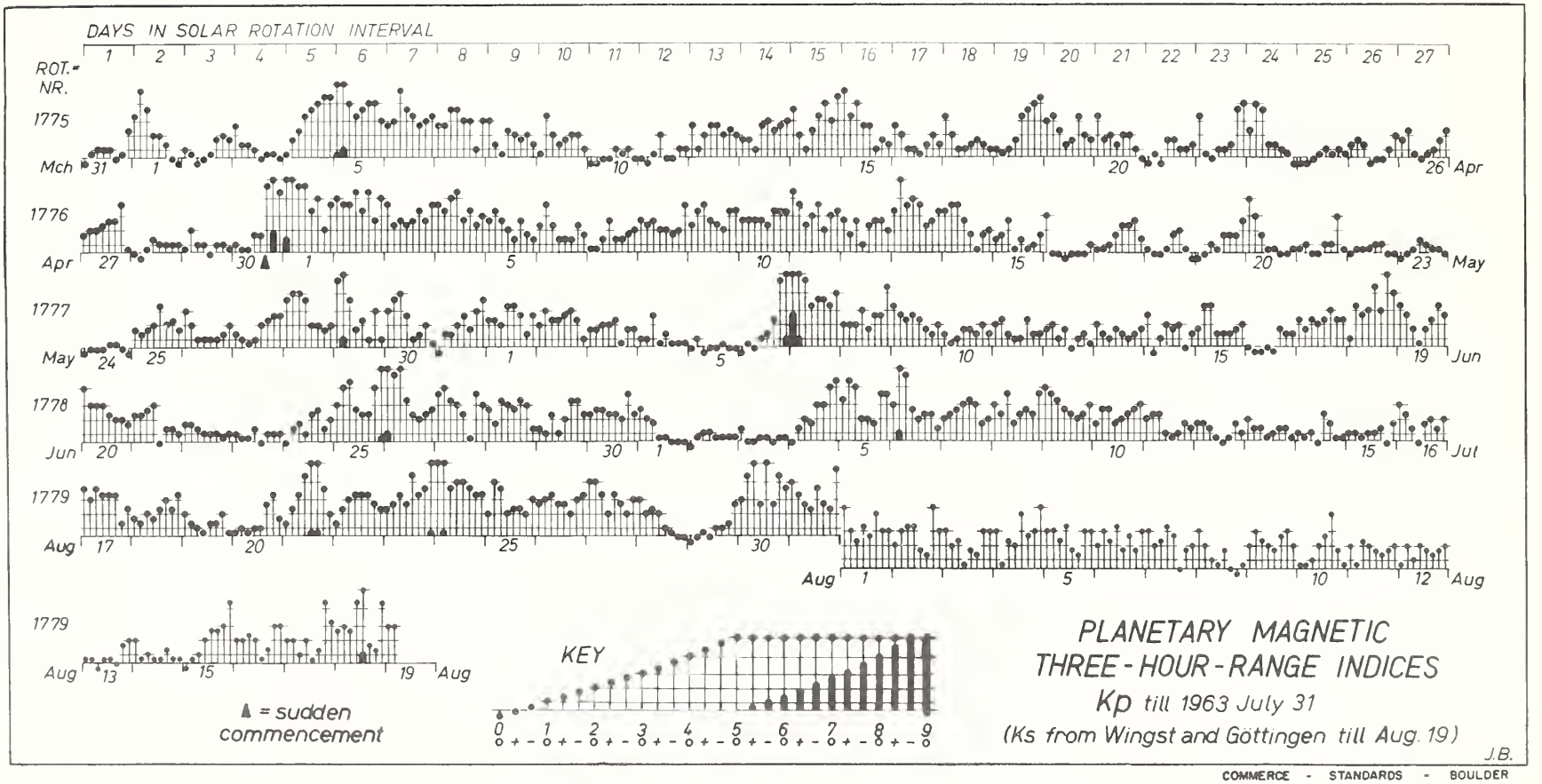


GEOMAGNETIC ACTIVITY INDICES

JULY 1963

July 1963	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.2	3- 2o 2- 1-	1- 0+ 0+ 0+	9-	5	Five
2	0.2	0o 1- 1o 1o	1- 1- 1- 1-	5+	3	Quiet
3	0.0	1+ 0+ 0+ 1-	1- 0+ 1- 1-	5o	3	
4	0.8	0+ 1+ 2o 2-	3o 3o 4o 4+	20-	14	2
5	1.0	3+ 4+ 4o 2o	2o 2- 4- 4-	25-	18	3
						14
6	1.1	3o 6- 5- 3-	2o 2+ 2+ 1+	24o	20	15
7	0.8	2o 2+ 3- 3o	3+ 3o 2- 2o	20o	11	29
8	0.8	3o 2+ 4- 2-	2+ 3- 2+ 4-	22-	13	
9	0.8	4o 4- 3+ 3-	2+ 2o 2+ 3o	23+	15	
10	0.6	2- 3- 3- 2-	2o 2+ 3- 3o	19-	10	
11	0.2	2o 2+ 2+ 1o	1- 1o 2- 1+	12+	6	Five
12	0.2	2- 2- 1+ 1-	0+ 1- 2- 1o	9o	4	Disturbed
13	0.1	2o 1+ 1+ 1-	1o 1+ 1+ 1-	10-	5	
14	0.2	1o 1- 1o 0+	2+ 2- 1- 1-	8+	4	21
15	0.2	1o 1o 1- 1o	1o 1+ 0+ 2-	8o	4	23
						24
16	0.3	3o 2+ 1+ 0+	2- 2o 1+ 2o	14o	7	30
17	1.0	4- 3o 4- 3+	3+ 3+ 1+ 2+	24o	16	31
18	0.8	2- 1+ 2o 2-	2+ 3o 2+ 3+	18-	9	
19	0.2	2o 1+ 1o 1-	1+ 1+ 2o 1-	10+	5	
20	0.4	1- 1o 1- 1o	1o 3- 3+ 2-	12o	7	
21	1.2	1+ 2+ 3+ 4+	5+ 5+ 4- 2o	28-	26	Ten
22	0.8	1+ 2+ 3o 3+	3+ 3+ 3- 2+	22-	13	Quiet
23	1.1	2+ 3- 3+ 3-	4+ 3+ 4- 5+	28-	22	
24	1.3	5o 5+ 4- 4o	4o 4- 3+ 3+	32+	30	1
25	0.7	2o 4o 4- 2o	2+ 2+ 2o 3o	21+	13	2
						3
26	0.8	3- 3o 3+ 3-	3- 2o 3o 3+	23-	14	11
27	0.9	4o 4o 3+ 2o	3+ 3- 2o 3o	24+	16	12
28	0.3	3o 2o 2+ 2o	1o 1- 0+ 0+	12-	6	13
29	0.2	0o 0+ 1- 0+	1o 1o 1+ 3-	7+	4	14
30	1.3	3o 4+ 5o 3-	5o 3- 4+ 4-	31-	28	15
31	1.1	4o 3+ 3- 2+	4- 3- 2+ 5-	26-	18	19
						29
Mean:	0.63			Mean:	12	

COMMERCE - STANDARDS - BOULDER


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NR.
1775
Mch 31 1 5 10 15 20 26 Apr
1776
Apr 27 30 1 5 10 15 20 23 May
1777
May 24 25 30 1 5 10 15 19 Jun
1778
Jun 20 25 30 1 5 10 15 16 Jul
1779
Aug 17 20 25 30
Aug 1 5 10 12 Aug
1779
Aug 13 15 19 Aug
▲ = sudden commencement
KEY
0 1 2 3 4 5 6 7 8 9
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp till 1963 July 31
(Ks from Wingst and Göttingen till Aug. 19)
J.B.
COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JULY 1963

NORTH ATLANTIC

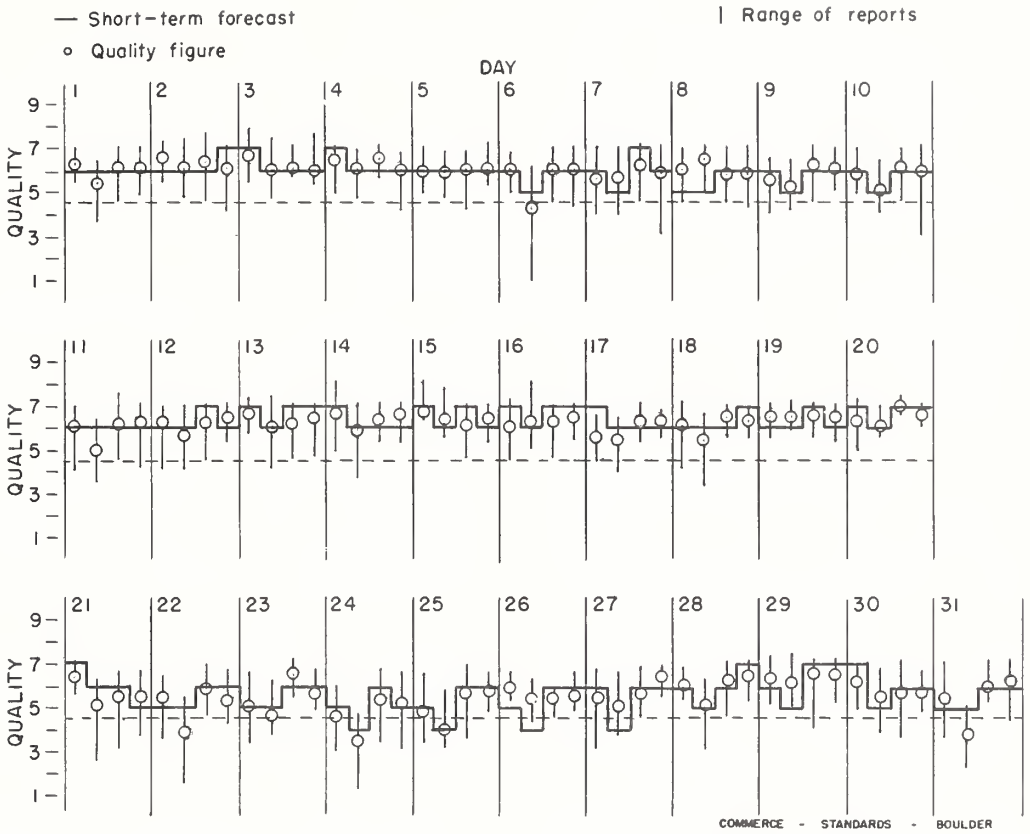
JULY 1963	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF				WHOLE DAY INDEX	ADVANCE FORECASTS (J-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY				GEOMAGNETIC FFR	
	00 TO 06	06 TO 12	12 TO 18	18 TO 24	00	06	12	18		1-7 DAYS FINAL J_S	1-7 DAYS SDW J	1-3 DAYS	1-7 DAYS	HALF DAY (1)	HALF DAY (2)
01	6+	5+	6+	6o	6	6	6	6	6o	6	6			2	1
02	7-	6o	6+	6+	6	6	6	7	6+	5	5			1	1
03	7-	7-	7-	7-	7	6	6	6	7-	5	5			1	1
04	6+	6o	7-	6o	7	6	6	6	6+	5	5			2	3
05	6o	6o	6o	6o	6	6	6	6	6o	5	5			(4)	3
06	6o	4+	6o	6o	6	5	6	6	5+	6	6			(4)	2
07	6-	6-	6+	6o	6	5	7	6	6o	6	6			3	3
08	6o	7-	6o	6o	5	5	6	6	6+	6	6			3	3
09	6-	5+	6+	6+	6	5	6	6	6-	6	6			(4)	3
10	6o	5+	6o	6o	6	5	6	6	6-	6	6			3	2
11	6o	5o	6+	6+	6	6	6	6	6o	6	6			2	1
12	6+	6-	6+	7-	6	6	7	6	6+	6	6			2	1
13	7-	6o	6o	6+	7	6	7	7	6+	6	6			2	2
14	7-	6o	6+	7-	7	6	6	6	7-	6	6			1	1
15	7-	6+	6+	6+	7	6	7	6	7-	6	6			1	1
16	6o	6+	6+	7-	7	6	7	7	6+	6	6			2	2
17	6-	6-	6+	6+	7	6	6	6	6o	6	6			(4)	2
18	6o	5+	7-	6+	6	6	6	7	6+	6	6			2	3
19	7-	7-	7-	7-	6	6	7	6	7-	6	6			2	1
20	6+	6+	7o	7-	7	6	7	7	7-	6	6			1	2
21	6+	5o	6-	6-	7	6	6	5	6-	6	6			3	3
22	6-	4-	6o	5+	5	5	6	6	5o	6	6			3	3
23	5o	5-	7-	6-	5	5	6	6	6-	5	5			3	(4)
24	5-	3+	5+	5+	5	4	6	5	(4+)	5	5			(4)	3
25	5o	4o	6-	6-	5	4	5	6	5o	5	5			3	2
26	6o	6-	6-	6-	5	4	6	6	6-	6	6			3	3
27	6-	5o	6-	6+	6	4	6	6	6-	6	6			(4)	3
28	6+	5o	6+	7-	6	5	6	7	6o	7	7			3	1
29	6+	6+	7-	7-	6	5	7	7	7-	7	7			0	1
30	6+	6-	6-	6-	7	5	6	6	6-	6	6			(4)	3
31	6-	4-	6o	6+	5	5	6	6	5o	6	6			3	3
Score:				P	19	14	21	22		17	17				
				S	12	10	10	9		12	12				
				U	0	1	0	0		1	1				
				F	0	1	0	0		0	0				
Disturbed Periods:				P	0	1	0	0		0	0				
				S	0	4	0	0		1	1				
				U	0	0	0	0		0	0				
				F	0	0	0	0		0	0				

NORTH PACIFIC

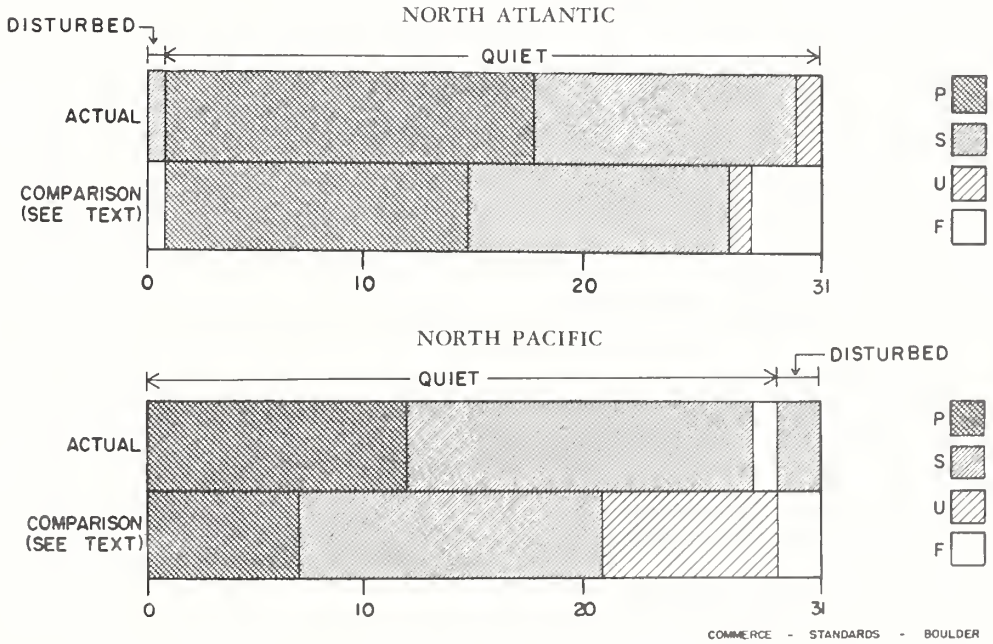
	NORTH PACIFIC 12 HOURLY QUALITY FIGURES		SHORT-TERM FORECASTS ISSUED AT		WHOLE DAY INDEX	ADVANCE FORECASTS (J_P REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY				GEOMAGNETIC K_{FI}	
	0700 TO 1900	1900 TO 0700	0600	1800		1-7 DAYS FINAL J_{PS}	1-7 DAYS SDW J_P	1-3 DAYS	1-7 DAYS	HALF DAY (1)	HALF DAY (2)
01	5	6	6	6	5	6	6			2	0
02	6	6	6	6	6	5	5			1	0
03	6	6	6	6	6	4	4			1	1
04	6	5	6	6	5	5	5			1	3
05	5	6	4	5	5	5	5			(4)	2
06	5	5	5	5	5	6	6			(4)	2
07	5	6	6	6	5	6	6			3	2
08	5	6	5	6	5	6	6			3	2
09	5	6	5	6	5	6	6			(4)	2
10	6	6	6	6	6	6	6			3	2
11	5	6	6	6	5	6	6			2	2
12	6	6	6	6	6	6	6			2	0
13	6	6	6	6	6	6	6			2	1
14	6	7	6	6	7	6	6			1	1
15	7	7	6	6	7	6	6			1	1
16	6	6	6	6	6	6	6			1	1
17	4	5	5	5	5	6	6			(4)	3
18	6	6	6	6	5	5	5			2	2
19	6	6	6	6	6	5	5			2	2
20	6	6	6	6	6	6	6			1	2
21	4	5	6	5	5	6	6			3	(4)
22	4	5	5	5	(4)	5	5			3	3
23	5	4	5	5	5	5	5			3	3
24	5	5	4	5	(4)	5	5			(5)	3
25	5	5	5	5	5	5	5			3	2
26	5	5	5	5	5	6	6			3	2
27	5	5	5	5	5	6	6			3	2
28	6	6	5	5	5	6	6			2	0
29	6	5	6	6	6	6	6			0	1
30	5	4	6	5	5	6	6			(4)	(4)
31	6	5	5	5	5	5	5			2	3
			19	23		12					
			9	6		16					
			0	0		0					
			0	0		1					
			0	0		0					
			2	2		2					
			0	0		0					
			1	0		0					

NORTH ATLANTIC

JULY 1963

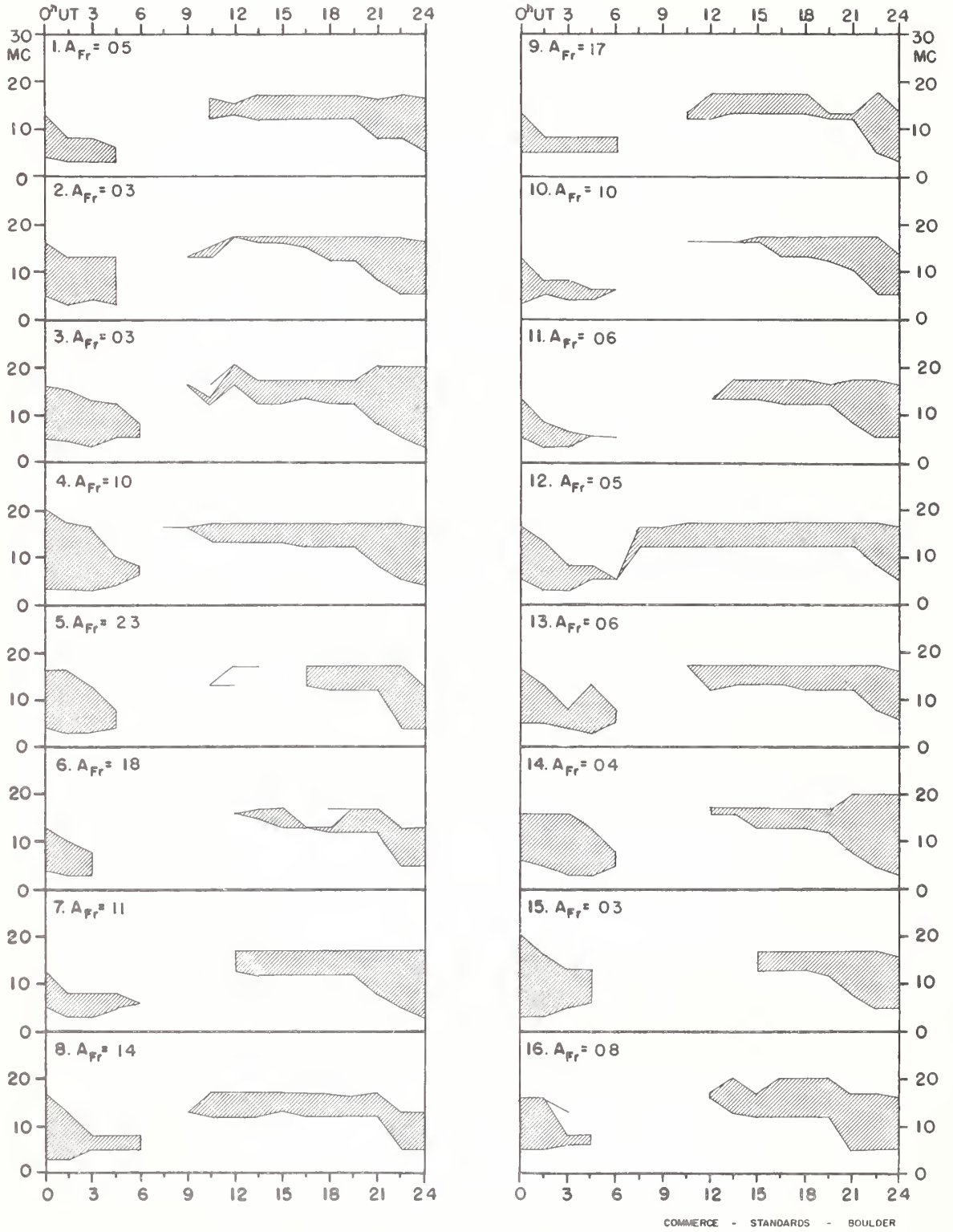

— Short-term forecast
o Quality figure
| Range of reports
DAY
QUALITY
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 31
9 7 5 3 1
COMMERCE - STANDARDS - BOULDER

Outcome of advance forecasts--final estimates (1 to 7 days ahead)



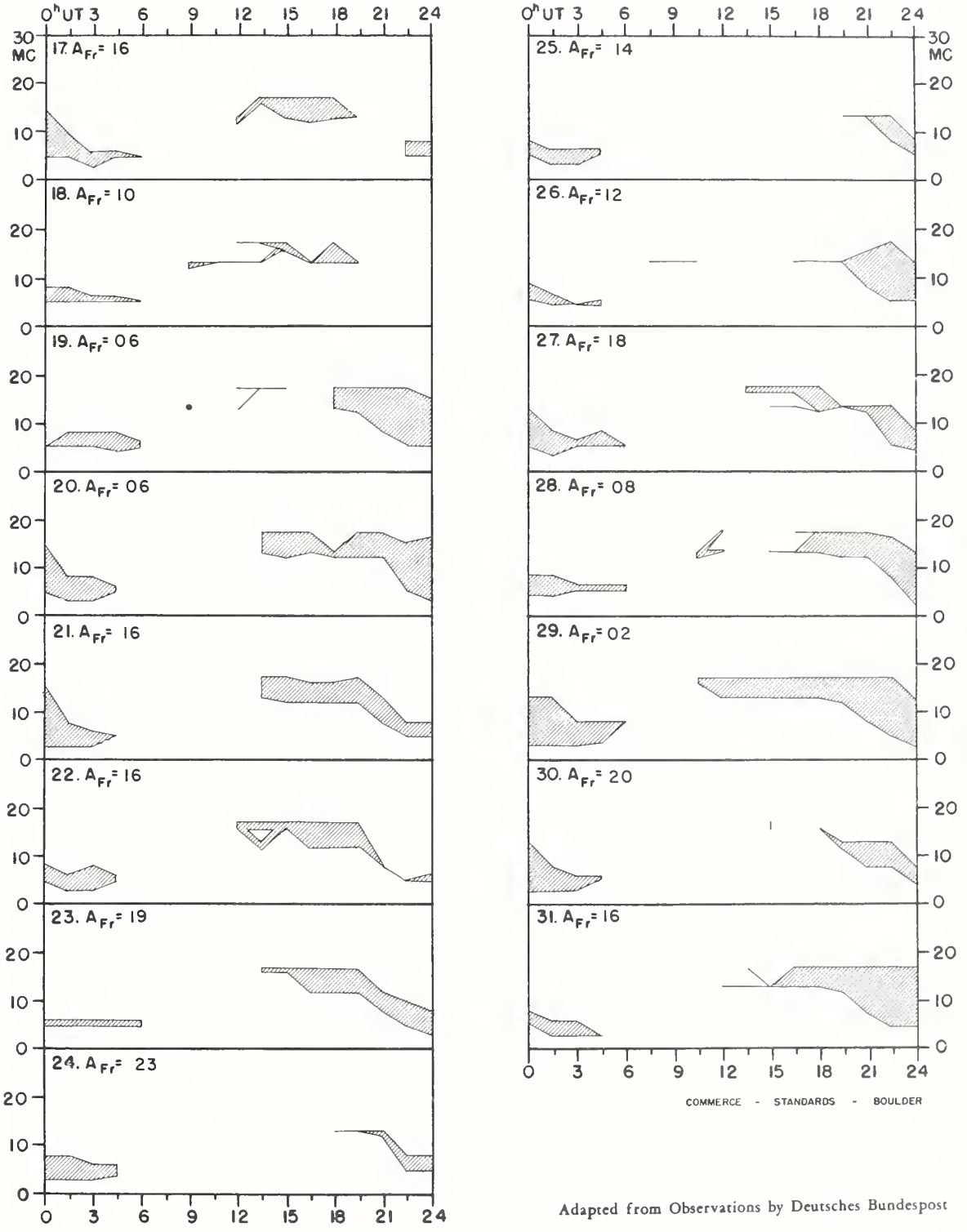
USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1963



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1963



Adapted from Observations by Deutsches Bundespost

ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

AUGUST 1963

Issued August 1963 Day/Time U.T.	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Intervals
18/1600		203	Magnetic Storm 17/19XXZ	Start
18/1925	McMath, Solar Flare, Two 18/1759Z			
19/1600		204		Finish

COMMERCE - STANDARDS - BOULDER